```
em_esthuml0:*
em_esthuml1:*
em_esthuml1:*
em_esthuml3:*
em_esthuml5:*
em_esthuml5:*
em_esthuml6:*
em_esthuml6:*
em_esthuml9:*
em_esthuml9:*
em_esthum20:*
em_esthum21:*
em_esthum22:*
em_esthum23:*
em_esthum22:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_estrol0:*
em_estrol1:*
em_estrol2:*
em_estrol3:*
em_estrol4:*
em_estrol4:*
em_estrol6:*
em_estrol7:*
em_estrol7:*
em_estrol9:*
em_estrol9:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_estpl10:
em_estpl10:
em_estro2:*
em_estro3:*
em_estro4:*
em_estro4:*
                                                                                                                                                                                                                                                                           em_estin2:
em_estin3
em_estin4
em_estin6
em_estom1
em_estow2
em_estpl1
em_estpl2
em_estpl1
em_estpl3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_estro8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est26:'gb_est27:'gb_est28:'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9b_est29:
9b_est31:
9b_est41:
9b_est41:
9b_est42:
9b_est42:
9b_est44:
9b_est44:
9b_est45:
9b_est45:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estro6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_est25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_estro7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96:
97:
98:
100:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101:
102:
103:
                                                                                          May 13, 2001, 07:05:25; Search time 5997.24 Seconds (without alignments) 241.810 Million cell updates/sec
                                                                                                                                                               166
1 ctcagcttaggccagcctac.....caaccctcaaggagctcatt 166
                                                                                                                                                                                                                                                                          19247034
              GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                              9623517 seqs, 4368049070 residues
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                      IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0.
Maximum DB seq length: 2000000000
                                                                                                                                                  US-09-451-527-88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est40:*
em_estba:*
em_estfun:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_esthum3:'
em_esthum4:'
em_esthum5:'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum6:
em_esthum7:
em_esthum8:
em_esthum9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9b est10:*
9b_est11::;
9b_est13:*
9b_est13:*
9b_est16:*
9b_est16:*
9b_est16:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
9b_est20:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_esthum2
                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est2:*
gb_est3:*;
gb_est4:*;
gb_est6:*;
gb_est6:*;
gb_est7:*;
gb_est8:*;
                                                                                                                                                                                                                                                                                                                                                                                                                gb_estl:'
                                                                                                                                                                                                                                                                                                                                                                                                  EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                               Searched:
                                                                                              Run on:
                                                                                                                                                    Title:
```

```
em_gss_fun:*
em_gss_huml:*
em_gss_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_est86:*

gb_est887:*

gb_est899:*

gb_est990:*

gb_est100:*

gb_est10:*

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_gss_other
gb_est48:*
gb_est49:*
gb_est50:*
gb_est51:*
gb_est51:*
gb_est51:*
gb_est55:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_gss_hum3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_gss_inv2
em_gss_inv3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9b_est79:*
9b_est80:*
9b_est81:*
9b_est82:*
9b_est83:*
9b_est84:*
                                                                                                                                                                                                                                                                                              gb_est56::9
gb_est57::9
gb_est58::9
gb_est59::
                                                                                                                                                                                                                                                                                                                                                                                                                                             9b_est61:
9b_est61:
9b_est63:
9b_est64:
9b_est65:
9b_est66:
9b_est76:
9b_est77:
9b_est77:
```

em\_gss\_pln1:\*
em\_gss\_pln2:\*
em\_gss\_rod1:\*
em\_gss\_rod2:\*
em\_gss\_rod3:\*
em\_gss\_rod4:\*
em\_gss\_rod4:\*
em\_gss\_rod5:\*
em\_gss\_rod5:\*
em\_gss\_rod5:\* em\_gss\_vrt2:\* 9b-9ss18:\*
9b-9ss19:\*
9b-9ss20:\*
9b-9ss21:\*
9b-9ss21:\*
9b-9ss23:\* gb\_gss29:1 gb\_gss30:1 gb\_gss31:1 gb\_gss32:' gb\_gss33:' gb\_gss34:' gb\_gss27: gb\_gss28: gb\_gss25 gb\_gss26 1990... 1991... 1995... 1996..

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	AZ305110 1M0005P05	BF867977 963095D02					B21994 F23G15-Sp6	BF131613 601820420	BB435254 BB435254	AL270520 Tetraodon	BF967613 602287495		AL056652 Drosophil	AL065856 Drosophil	BF718319 EST92 mic	AL108415 Drosophil	BF868213 963104606	BF257317 HVSMEf001
Q	AZ305110	BF867977	BF868214	BB300252	CNS04M4J	BF033106	B21994	BF131613	BB435254	CNS041Q7	BF967613	BE897251	CNS0052P	CNS006S5	BF718319	CNS017RP	BF868213	BF257317
DB ID	219	170	170	130	231	143	227	144	133	231	171	141	229	229	168	229	170	146
% Query Match Length DB	581	1996	918	225	830	719	782	1979	247	860	639	1756	844	919	1018	1101	1236	1409
% Query Match	34.6	. 22.7	22.4	22.3	22.3	22.2	22.0	21.4	21.3	21.3	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.1
Score	57.4	37.6	37.2	37	37	36.8	36.6	35.6	35.4	35.4	35.2	35.2	32	35	35	35	32	35
Result No.		c 5	e	4	S	9	7	<b>ဆ</b> ပ	6	10	11	c 12	c 13	14	15	c 16	c 17	c 18

```
source
                                                                                                                                                                                                                                                                                                                                                                           BF867977/c
                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                  à
                  BF034619 601455047
AL054280 Drosophil
BF317377 601903852
BG10666 602290504
BF310467 601894946
BG115260 602316188
BF42154 FML_7-F04
BG052316 RHIZ2_12_AQ947792 Sheared D
BF840572 MR1-HT106
                                                                                                               AV603278 AV603278
AZ197129 SP_1034_A
AZ197129 SP_1034_A
ALC00767 Drosophil
BF139436 601785420
BF204710 601867594
BF137829 601782476
BF206910 601870345
BF32910 BF122910
BF152910 BF122910
BF152910 BF122910
BF152910 BF125910
BF152910 BF125910
BF152910 BF125910
BF152910 BF125910
BF152910 BF125910
BF152910 BF125910
BF1399469 HF12910
BF389486 GF12910
BF389486 GF12910
BF389486 GF12912.x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            H
                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 581)
Dunn,D., Aoyagi,A., Barber,M., Beacorn,T., Duval,B., Hamil,C.,
Islam,H., Longacre,S., Mahmoud,M., Meenen,E., Pedersen,T., Reilly,M., Rose,M., Rose,R., Stokes,R., Tingey,A., von Niederhausern,A. and Wright,D.,Weiss,R.
                                                                                                                                                                                                                                                                                                                            AZ305110 581 bp DNA GSS 29-SEP-2000
1M0005P05R Mouse 10kb plasmid UUGCIM library Mus musculus genomic
clone UUGCIM0005P05 R, DNA sequence.
AZ305110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mouse whole genome scaffolding with paired end reads from 10kb plasmid inserts
Unpublished (2000)
Contact: Robert B. Weiss
University of Utah Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            田.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="uucclm0005p05"
/clone_lib="Mouse l0kb plasmid UUGCIM library"
/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biomedical Polymers Research Bldg.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error: 0.00
Plate: 0005 row: P column: 05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate: 0005 row: P Column: 05
Seg primer: CACACAGGAAACAGCTATGACC
Class: plasmid ends
                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
                                                                                                                                               BF139436
BF204710
                                                                                                                                                                                                                                     BF256669
BF338185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High quality sequence stop: 581,
                                                                                                                            AZ197129
                                                                                                                                      CNS005TE
                                                                                                                                                                             BF206910
                                                                                                         BF840572
                                                                                                                                                                   BF137829
                                                                                                                                                                                                BB152910
                                                                                                                                                                                                                  AZ387482
                                                                                                                                                                                                                            CNS017XZ
                                                                                                                                                                                                                                                        AI819748
                     BF034619
                                                 BG106666
                                                                                                                                                                                                         BB346864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                        AZ305110.1 GI:10341800
                                                                                                214
169
30
                                                                                                                                     229
                                                                                                                                                                                              126
131
220
229
145
146
                                                                                                                                                       145
                                                                                                                                                                           145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 801 585 5606
Fax: 801 585 7177
                            839
902
1872
1225
335
608
608
505
911
                                                                                                                                                       1405
1498
1517
279
280
300
                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                             house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
Rm. 308, 1
84112, US
 8.88.88.88
8.88.88.88
8.88.66.88
8.46.66.88
                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                RESULT
AZ305110
                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
  0000
                                                                                                                                                                                                                             0000
```

```
//documostations.com/ Strain Allovoold, 'I-resistant, F-residence and account Strain Allovoold, 'I-resistant, F-residence and the Jackson Laboratory Mouse DNA Resource (http://www.jax.org/resources/documents/dnares/). The DNA was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with TA DNA polymerase and TA polymuclectide kinase. Adaptor oligonuclectides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pwDA2 (gil4732114|gb|AF129072.1), a copy-number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to adaptored vector DNA, and transformed into chemically-competent E. coli XL10-Gold (Stratagene) cells and selected for ampicillin resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF867977 1996 bp mRNA EST 19-JAN-2001
963095D02.xl C. reinhardtii CC-1690, Stress condition I, normalized
, Lambda Zap II Chlamydomonas reinhardtii cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /strain="CC-1690 wild type mt+ 21gr"
/db_xref="taxon:3055"
/clone_lib="C. reinhardtil CC-1690, Stress condition I,
normalized, Lambda Zap II"
/note="Vector: pBluescript II SK-; Site_1: EcoRI; Site_2:
XhoI; This library, constructed by John Davies and Jeffrey
McDermott, combines cDNAs from CC-1690 cells grown to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Grossman, A., Davies, J., Federspiel, N., Harris, E., Hauser, C., Lefebvre, P., McDermort, J. P., Shrager, J., Silflow, C. and Stern, D. Analyses of the Chlamydomonas reinhardtii Genome: A Model, Unicellular System for Analyzing Gene Function and Regulation in Unpublished (2000)

Contact: Charles Hauser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chlamydomonas reinhardtii
Valdomanas viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
1 (bases 1 to 1996)
/lab_host="E. Coli strain XL10-Gold, T1-resistant, F-"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46 tectgeattggetetgggetecatggegetetggttgaetgtggteattgeteteaeetg 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.6%; Score 57.4; DB 219; Length 581; 76.9%; Pred. No. 6.5e-05; Live 0; Mismatches 21; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106 cctcggtggccttgcctcccgagccctgtg 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chlamydomonas reinhardtii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: chauser@duke.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF867977.1 GI:12258121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Duke University
Durham, NC 27708-1000
Tel: 919 613 8159
Fax: 919 613 8177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match 34.6
Best Local Similarity 76.9
Matches 70; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCMB BOX 91000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  169
```

7 others

Ų

237

б

ပ

288

ď 48

BASE COUNT

```
John Takey, Constructed by John Davies and Jeffrey McDermott, combines constructed by John Taker (30 min, 1hr, 4hr), Taker (30 min, 1hr, 4hr), Taker (30 min, 1hr, 4hr) and NH4 to NO3 (30min, 1hr, 4hr). PolyA mRNA was purified from each sample, pooled and CDNA synthesized. The cDNA was directionally cloned into lambda Zap II (Stratagene) in the EcoRI (5') and XhoRI (3') sites. pBluescript II SK- plasmids were excised from the lambda ZAP clones by superinfection with ExASsist (Stratagene) phage. The library was normalized using method 4 described in Bonaldo et al (1996) Genome Research 6: 791-806."
mid-log phase in TAP-N (30 min, 1hr, 4hr), TAP-S (30 min, 1hr, 4hr), TAP-P (4hr, 12hr, 24hr), NO3 to NH4 (30min, 1hr, 4hr) and NH4 to NO3 (30min, 1hr, 4hr). PolyA mRNA was purified from each sample, pooled and cDNA synthesized. The cDNA was directionally cloned into lambda Zap II (Stratagene) in the ECORI (5') and XhoRI (3') sites. PBluescript II SK plasmids were excised from the lambda ZAP clones by superinfection with ExAssist (Stratagene) phage. The 11brary was normalized using method 4 described in Bonaldo et al (1996) Genome Research 6: 791-806."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF868214 918 bp mRNA EST 19-JAN-2001 963104H02.xl C. reinhardtii CC-1690, Stress condition I, normalized , Lambda 2ap II Chlamydomonas reinhardtii cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grossman, A., Davis, J., Federspiel, N., Harris, E., Hauser, C., Lefebvre, P., McDermott, J.P., Shrager, J., Silflow, C. and Stern, D. Analyses of the Chlamydomonas reinhardtii Genome: A Model, Unicellular System for Analyzing Gene Function and Regulation in Vascular Plants; project phase 3 Gene Function and Regulation in Dupublished (2000)

Contact: Charles Hauser

DCMB Box 91000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="C. reinhardtii CC-1690, Stress condition I,
normalized, Lambda Zap II"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1462 GCTCTCGCCTCGCTCTGNCGTCGTTNCGCGCTTNCCTGCNCCTCTTTCNCTCTT 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30 getettecetegetectectgeattggetetgggetecatggegetetggttgaetgtgg 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90 teattgeteteacetgeeteggtggeettgeeteecegageeetgtgaeteeete 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 170; Length 1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /strain="CC-1690 wild type mt+ 2lgr"
/db_xref="taxon:3055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 37.6; DB
Pred. No. 8;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: chauser@duke.edu.
Location/Qualifiers
1. .918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chlamydomonas reinhardtii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chlamydomonas reinhardtii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF868214.1 GI:12258358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22.7%;
55.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Duke University
Durham, NC 27708-1000
Tel: 919 613 8159
Fax: 919 613 8177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 918)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                       631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF868214
```

SOURCE

qq ð

ò

FEATURES

TITLE

COMMENT

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 225)

S Konno, H., Alzawa, K., Akahira, S., Akiyama, J., Arakawa, T., Carninci, P., Endo, T., Fukuda, S., Fukunishi, Y., Hara, A., Hayatsu, N.,
Izawa, M., Kadota, K., Kagawa, I., Ishikawa, J., Ishikawa, T., Itoh, M.,
Izawa, M., Kadota, K., Kagawa, I., Kai, C., Kawai, J., Kikuchi, N.,
Kiyosawa, H., Kojima, Y., Kondo, S., Kawai, J., Kikuchi, N.,
Matsuyama, T., Miki, R., Mizuno, Y., Nakamura, C., Kurihara, C., Salto, K., Shibata, Y., Shidagawa, A., Sato, K., Shibata, Y., Shidagawa, A., Shiraki, T., Sogabe, Y., Sugahara, Y., Suzuki, H., Suzuki, H., Tagawa, A., Takahashi, F., Tominaga, N., Toya, Y., Tonnoga, Y., Watahiki, A., Watanabe, S., Yamamura, T., Yamanaka, I., Yano, R., Yasu, Y., Watahiki, A., Watanabe, S., Yamamura, T., Yamanaka, I., Yano, R., Yasu, M., and Hayashizaki, Y. Watahiki, A., Watanaba, Y., Watahiki, A., Watanaba, Y., Watahiki, A., Watahiki, A., Watanaba, S., Yamamura, T., Yoshino, M., Unpublished (2000)
Contact: Yoshinide Hayashizaki, Y., Genome Exploration Research Group, Life Science Tsukuba Center, Genome Exploration Research Group, Life Science Tsukuba Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Strances Center 1 Royadai, Tsukuba, Ibaraki 305-0074, Japan Tel: +81-298-36-9013
Fax: +81-298-36-9013
Fax: +81-298-36-9038
Email: genome-resettc.riken.go.jp,
URL:http://genome-resettc.riken.go.jp/
Carninci.P., Nishiyama Y., Nestover,A., Itoh,M., Nagaoka,S., Sasaki,N., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Thermostabilization and thermoactivation of thermolabile enzymes by trehalose and its application for the synthesis of full length cDNA. Proc. Natl. Acad. Sci. U.S.A. 95 (2), 520-524 (1998)
Itoh,M., Kitsunai,P., Akiyama,J., Shibata,K., Izawa,M., Kawai,J., Tomaru,Y., Carninci,P., Shibata,Y., Ozawa,Y., Muramatsu,M., Okazaki,Y. and Hayashizaki,Y.
Automated filtration-based high-throughput plasmid preparation system. Genome Res. 9 (5), 463-470 (1999)
Carninci,P. and Hayashizaki,Y.
High-efficiency full-length cDNA cloning. Methods Enzymol. 303,
                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The Institute of Physical and Chemical Research (RIKEN), Genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BB300252 ZES bp mRNA EST 10-JUL-2000 BB300252 RIKEN full-length enriched, adult male corpora quadrigemina Mus musculus cDNA clone B230015A06 3' similar to AF026124 Mus musculus schwannoma-associated protein (SAM9) mRNA,
                                                                                                                                                                                                                                                    70 ggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccgag 129
                                                                                                                                                                149 CGTTTCCCCTCTTCCTGGGGTCCCGGCGCTCGTGGGCCNCCTCTCCTTTCCCCCCTGG 208
                                                                       Gaps
                                                                                                                            10 ggccagcctacgacctgcctgctcttccctcgctcctgcattggctctgggctccat 69
                                                                    ;
0
   Length 918;
   170;
      DB
Score 37.2; DE
Pred. No. 9.3;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                    130 ccctgtgactccctccccaac 150
                                                                                                                                                                                                                                                                                                                                                                                                                                               209 TCTCGGGGGGCCCCCCCCACC 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BB300252.1 GI:9000957
   22.4%;
53.2%;
                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sciences Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
BB300252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   house mouse.
                             Local Similarity
nes 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-44 (1999)
      Query Match
                             Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB300252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                      g
                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                    113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
 JOURNAL
REFERENCE
                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                     AUTHORS
                                                                                                                                              REFERENCE
                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF033106
                                                                                                                                                                                                                                                                                         FEATURES
                                                                                          TITLE
                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
//organism="taxon:10090"
//clone="p2300154506"
//clone_lib="RIKEN full-length enriched, adult male corpora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó;
                                                                                                                                                                                                                                                                                  Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5' GAGAGAGAGCATCTTTTTTTTTTTTTVN 3'], cDNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CNSO4M4J 830 bp DNA GSS 21-MAY-2000
Tetraodon nigroviridis genome survey sequence PUC-Ori end of clone
119D14 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSS; genome survey sequence.

Tetraodon nigroviridis.

Tetraodon nigroviridis

Tetraodon nigroviridis

Tetraodon nigroviridis

Tetraodon nigroviridis

Bukaryota; Metazoi Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;

Eurypterygii; Ctenosquamata; Acanthomorpha; Euacanthomorpha;

Holacanthopterygii; Acanthopterygii; Percomorpha;

Tetraodontiformes; Tetraodontoidei; Tetraodon.

[ bases 1 to 830)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                  /note="Site_1: Sal1: Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76 CTACCTCCTCCCCCACTGCCCTGACACTTTGCCCCCTGTGGACCTAGCAGATTGGGGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Please visit our web site (http://genome.rtc.riken.go.jp) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136 TGGCCCCCAAAGAAGTGGGGGTTCTTGCTGGCCCCAGACCTTTGCCCCACCCCCAAAGGC 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33 cttccctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtca 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                            /tissue_type="corpora quadrigemina"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 8.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 37;
                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                              quadrigemina"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL296956.1 GI:8035536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22.3%;
56.0%;
                                                                                                                                                                 /sex="male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
les 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL296956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                153 tcaaq 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196 CCAAG 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CNS04M4J
                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

```
Genoscope.

Direct Submission

Direct Submission

Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases

Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases

This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.

http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                          Human gene number estimate provided by genome wide analysis using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 719)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BF033106 719 bp mRNA EST 20-OCT-2000 601454522F1 NIH_MGC_66 Homo sapiens cDNA clone IMAGE:3858196 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   egetetggttgaetgtggteattgeteteacetgeeteggtggeettgeeteecegagee 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="libpl4"
/clone_lib="G"
/note="Genoscope sequence ID : COBG119DB07SP1-end :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 830;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA Library Preparation: Life Technologies, Inc cDNA Library Arrayed by: The I.M.A.G.E. Consorti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22.3%; Score 37; DB 231; 44.8%; Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             υ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       column: 05
                                                                                                                          Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Tissue Procurement: DCTD/DTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plate: LLAM9589 row: 1 column
High quality sequence stop: 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         132 ctgtgactccctccccaacctc 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
BF033106
BF033106.1 GI:10740818
(bases 1 to 830)
                                                                                                                                                                             (bases 1 to 830)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             378 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUC-Ori"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                        Unpublished
```

9

```
Homo sapiens
                 Query Match
Best Local Similarity
Matches 72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                     RESULT 8
BF131613/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                 qq
                                                                                                                                                                                     qq
                                                                                                                                                    δ
                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnodlophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
Brassicales; Brassicaceae; Arabidopsis.
                                           /db_xref="taxon:9606"
/clone="InAGE:3889196"
/clone=lib="NIH_MGC_66"
/tlssuc_type="adenocarcinoma"
/tlssuc_type="adenocarcinoma"
/note="Organ: ovary; Vector: pcMV-SPORT6; Site_1: Not1; Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.8 kb. Library constructed by Life
                                                                                                                                                                                                                                                                                                   . o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peng, J., Dewar, K., Buehler, E., Kim, C., Li, Y., Shinn, P., Sun, H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="IGE"
/sex="hermaphrodite"
/note="Vector: BeloBACII; Site_1: EcoRI; Site_2: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis Thaliana Genome Center
University of Pennsylvania
Dept. of Biology, University of Pennsylvania, Philadelphia, PA
                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B21994 782 bp DNA GSS 16-SEP-1997 F23G15-Sp6 IGF Arabidopsis thaliana genomic clone F23G15, DNA sequence.
                                                                                                                                                                                                                                                                                                                                      11 gecagectacgacetgeetgetettecetegetectectgeattggetetgggetecatg 70
                                                                                                                                                                                                                                                                                                                                                           5 GCCGAGCCGCGACCTTCCGGCCGTCCCCACCTCGCCGCATGCGCTTCGCCCCTA 64
                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                  22.2%; Score 36.8; DB 143; Length 719; 56.7%; Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24 others
                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                   52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Arabidopsis thaliana"
                                                                                                                                                                                                     169 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        171 t
                                                                                                                                                                                                                                                                                     Pred. No. 11;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 215-898-9384
Fax: 215-898-8780
Email: jecker@atgenome.bio.upenn.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Produced by Thomas Altmann"
                                 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Class: BAC ends
High quality sequence start: 91
High quality sequence stop: 134
Location/Qualifiers
1. .782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /strain="Columbia"
/db_xref="taxon:3702"
Location/Qualifiers
                                                                                                                                                                                                 187 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       102 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BAC End Sequences at ATGC
Unpublished (1997)
Other_GSSs: F23G15-T7
Contact: Ecker J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="F23G15
                                                                                                                                                                                   Technologies.
193 c 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B21994.1 GI:2397048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       369 c
                                                                                                                                                                                                                                                                                   Best Local Similarity 56.7
Matches 68; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thale cress.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ecker, J.
                                                                                                                                                                                                                                                                       Query Match
                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B21994
                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
.;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1979)
NIH-MGC http://mgc.noi.nih.gov/.
                                                                                76 ctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgt 135
                                                                                                                                           DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                  Gaps
                                                              16 cctacgacctgcctgctcttccctcgctcctcctgcattggctctgggctccatggcgct 75
                                                                                                                                                                                                                                                                                                    BF131613 1979 bp mRNA EST 24-OCT-2000 601820420F1 NIH_MGC_58 Homo sapiens CDNA clone IMAGE:4052380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA Library Preparation: CLONETECH Laboratories, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
 Length 782;
                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCM889 row: g column: 05
High quality sequence stop: 413.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 144;
   DB 227;
                                90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.6; DB
Pred. No. 26;
0; Mismatches
Score 36.6; D
Pred. No. 13;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Tissue Procurement: ATTCC
                                                                                                                                                                                                                                                                                                                                                                  BF131613.1 GI:10970653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.4%;
54.6%;
22.0%;
ilarity 54.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 21.4
Best Local Similarity 54.6
Matches 71; Conservative
                                                                                                                                                                                                                       464 CCCCCCCCCC 475
                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
BF131613
                                                                                                                                                                                         136 gactccctcccc 147
```

LOCUS

qq ò

ò

```
CNS041Q7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206 CCAAG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 153 tcaag 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
CNSO41Q7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 247)

Konno, H., Aizawa, K., Akahira, S., Akiyama, J., Arakawa, T., Carninci, P., Endo, T., Fukuda, S., Fukunishi, Y., Hara, A., Hayatsu, N., Itch, M., Ishikawa, T., Itch, M., Izawa, M., Kadota, K., Kagawa, T., Kai, C., Kawai, J., Kikuchi, N., Kiyosawa, H., Kojima, Y., Kondo, S., Koya, S., Kurihara, C., Kusakabe, M., Matsuyama, T., Miki, R., Mizuno, Y., Namura, M., Oda, H., Okazaki, Y., Ono, T., Owa, C., Saito, H., Sakai, C., Sato, K., Shibata, Y., Shinagawa, A., Shiraki, T., Sogabe, Y., Sugahara, Y., Shinagawa, A., Shiraki, T., Sogabe, Y., Sugahara, Y., Suzuki, H., Suzuki, H., Suzuki, H., Suzuki, H., Yananaka, Takahashi, F., Tominaga, N., Toya, T., Yano, R., Yasulishi, A., Watanabe, S., Yamamura, T., Yamanaka, T., Yano, R., Wananaka, T., Yano, R., Yasulishi, A., Watanabe, S., Yamamura, T., Yasulishi, A., Woshiki, Y., Yoshino, M., Muranatsu, M., Muranatsu, M., Muranatsu, M., Muranatsu, M., Muranatsu, M., Muranatsu, M., Watanatsu, M., Watanabe, M., Shiki, A., Yoshino, M., Muranatsu, M., Watanatsu, M., Watanata, Watanata, M., Wat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: genome-resertc.riken.go.jp,
URL:http://genome.rtc.riken.go.jp,
URL:http://genome.rtc.riken.go.jp,
URL:http://genome.rtc.riken.go.jp/
Carninci.p., Nishiyama.Y., Westover,A., Itoh,M., Nagaoka,S., Sasaki
.N., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Thermostabilization and thermoactivation of thermolabile enzymes by
trehalose and its application for the synthesis of full length
cDNA. Proc. Natl. Acad. Sci. U.S.A. 95 (2), 550-524 (1998)
Itoh,M., Kitsunai,T., Akiyama,J., Shibata,K., Izawa,M., Kawai,J.,
Y. and Hayashizaki,Y., Shibata,Y., Ozawa,Y., Muramatsu,M., Okazaki,
Automated filtration-based high-throughput plasmid preparation
system. Genome Res. 9 (5), 463-470 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BB435254 RIKEN full-length enriched, adult pancreas Islet cells Mus musculus cDNA clone C820012M21 3' similar to ddbj:AF026124 Mus musculus schwannoma-associated protein (SAM9) mRNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (RIKEN), Genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:10090"
/clone="C820012M21"
/clone_lib="RIKEN full-length enriched, adult pancreas
Islet cells:
                                                                                                                                                                                                  High-efficiency full-length cDNA cloning. Methods Enzymol. 303,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Yoshihide Hayashizaki
Genome Exploration Research Group, Life Science Tsukuba Center,
Genome Science Laboratory
The Institute of Physical and Chemical Research (RIKEN), Genomi
                                                                1717 crererererrerrecerecrecerecrerrereresecececrecesecrecrice 1658
                                                                                                                                              84 ctgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtgactcct 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Please visit our web site (http://genome.rtc.riken.go.jp) for
24 ctgcctgctcttccctcgctcctgcattggctctgggctccatggggttga 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3-1-1 Koyadai, Tsukuba, Ibaraki 305-0074, Japan
Tel: +81-298-36-9013
Fax: +81-298-36-9098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,M., Muramatsu,M. and Hayashizaki,Y
RIKEN Mouse ESTs (Konno,H., et al.)
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB435254.1 GI:9274981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sciences Center
                                                                                                                                                                                                                                                                                                                                                                 1597 CCTCCTTCCT 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                144 ccccaacct 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BB435254
```

TITLE COMMENT FEATURES

```
for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                 /note="Site_1: Sall; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was GAGAGGAAGGAACCAAGAGCTTTTTTTTTTTTTTVN 3'], cDNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tetraodon nigroviridis genome survey sequence PUC-Ori end of clone 074N24 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Eurypterygii; Ctenosquamata; Acanthomorpha; Euacanthomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 860)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, C., Weissenbach, J., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J. Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         was cleaved with XhoI and BamHI. Vector: a modified pBluescript KS(+) after bulk excision from Lambda FLC I.-Islet cells were provided by Hiroo lwata, Institute Frontier Medical Sciences, Kyoto University, Sakyo-ku,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kyoto, 606-8507 Japan, whose assistance we gratefully acknowledge."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86 chacchecececeacheceridaeacheracececengreeaceraecaeaceregegan 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93 tigeteteaceigeeteggiggeetigeeteeeegageeeigigaeteeeteeeaace 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Holacanthopterygii; Acanthopterygii; Percomorpha;
Tetraodontiformes; Tetraodontoidei; Tetraodontidae; Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33 cttccctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21.3%; Score 35.4; DB 133; Length 247; 55.2%; Pred. No. 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
/cell_type="Islet cells"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS; genome survey sequence.
Tetraodon nigroviridis.
Tetraodon nigroviridis
                                                              /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL270520
AL270520.1 GI:7992444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               860 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sednence.
```

```
149 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
BE897251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 776 a
                                                                                                                                                                                                                      131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE897251/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οp
                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          National Institutes of Health, Mammalian Gene Collection (MGC)
National Institutes of Health, Mammalian Gene Collection (MGC)
National Institutes of Health, Mammalian Gene Collection (MGC)
Contact: Robert Streasberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Streasbergenih.gov
Tel: (301) 496-1550
Email: Robert_Streasbergenih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
Toshiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAM10038 row: n column: 23
                                                                        Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a large
scale clone-end sequencing project of the Tetraodon nigroviridis
genome. For more information, please take a look at
http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 639)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF967613 639 bp mRNA EST 23-JAN-2001
602287495T1 NIH_MGC_96 Homo sapiens cDNA clone IMAGE:4374742 3',
mRNA sequence.
BF967613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224 YSCCCYTCTSTCYGSCCCCTGTYCCTYYTSCCSCYCCCYTYSSTYSCCSATGCCCCCC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80 ttgactgtggtcattgctctcacctgcctcggtggccttgcctcccgagccctgtgact 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20 cgacctgcctgctcttccctcctcctgcattggctctgggctccatggcgctctgg 79
                                                                                                                                                                                                                                                                          /clone_lib="G" //otoe="Genoscope sequence ID : C0BG074DG12SP1~end :
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó;
                                                                                                                                                                                                                                                                                                                                                                                                              21.3%; Score 35.4; DB 231; Length 860; 38.3%; Pred. No. 26;
                                                                                                                                                                                                                                                                                                                                  92 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="074N24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                    59;
                                                                                                                                                                                                                                                                                                                                  ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                    28; Mismatches
                                                                                                                                                                                                                                                                                                                                  209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homor sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4374742"
/clone_lib="NIH_MGC_96"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence stop: 630.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                  137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140 ccctccccaaccctcaaggag 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SCSCCCCSCCGCMSGTAG 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF967613.1 GI:12334828
                  3 (bases 1 to 860)
Genoscope.
Direct Submission
                                                                                                                                                                                                                                                                                                                                  279 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
  Jnpublished
                                                                                                                                                                                                                                                                                                                                  143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    54;
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
JOURNAL
REFERENCE
AUTHORS
                                                          TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF967613
                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
```

ò g δ

```
/note-"Organ: brain; Vector: pBluescriptR (modified pBluescript K8+); Site_1: BamHI; Site_2: Sall-xhoI (gtcgag ): Oliqo-d'T primed using primer 5'-proproprimer 3', size-selected for average insert size 2.3 kb and normalized to ROT 5'-pris a primary library enriched for full-length clones and constructed using the cap-trapper method (Carninci, in preparation). Library constructed by M. Brownstein (NIMH/NHORI, National Institutes of Health). Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="IMAGE:3922421"
/clone=lib="NIH_MGC_72"
/clone=lib="NIH_MGC_72"
/tlssue_type="melanotic melanoma"
/lab_host="DHIOB (phage-resistant)"
/note="Organ: skin; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally Primer: Oligo dT.
Average insert size 2 kb. Library constructed by Life
Technologies."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1756)
NIH-MGC http://mgc.ncl.nih.gov/.
National institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE897251 1756 bp mRNA EST 20-OCT-2000 601437224F1 NIH_MGC_72 Homo sapiens CDNA clone IMAGE:3922421 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 399 GGCAGGGAGGGCAGGCCATGCTTTAGCTTCCTTAAGGCAGGGAGGATGAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 ctccatggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctc 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 agcttaggccagcctacgacctgcctgctcttccctcgctcctcctgcattggctctggg 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert Strausberg, Ph.D.
Tal: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Tlssue Procurement: ATCC/DCTD/DTP
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAM9756 row: p column: 06
                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 cccgagccctgtgactccctccccaacctcaaggagctc 163
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 35.2; DB
Pred. No. 29;
0; Mismatches
/tissue_type="hypothalamus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          row: p column: 06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           High quality sequence stop: 104. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   695 g
                           /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE897251.1 GI:10362526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Technologies.
                                                                                                                                                                                                                                                                                                                                                                                                                                              21.2%;
51.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 21.2
Best Local Similarity 51.2
Matches 82; Conservative
```

Φ

ORIGIN

DEFINITION

LOCUS

ACCESSION VERSION

ORGANISM

AUTHORS JOURNAL

TITLE

COMMENT

REFERENCE

KEYWORDS SOURCE

RESULT 13 CNS0052P/c

21

g ò 9

```
Web: www.genoscope.cns.fr

- Web: www.genoscope.cns.fr

- Determination of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP).

The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic strain y2; cn bw sp, the same strain used for the BDGP's pl and EST libraries. A more detailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://pacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS BF718319 1018 bp mRNA EST 02-JAN-2001
DEFINITION EST92 microdissected normal human epidermis Homo sapiens CDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : seqrefêgenoscope.cns.fr
                                                                                                                                                                                   CNSONGSS 919 bp DNA GSS 03-JUN-1999 Drosophila melanogaster genome survey sequence T7 end of BAC # BACR14J09 of RPCI-98 library from Drosophila melanogaster (fruit fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             813 BBSSSTSSTSTSTBTSSBTSSSTSTSTSSBBTSBSSSSSTSTSTBBSTSSBSSTSSSB 872
                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterrygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34 ttccctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcat 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 229; Length 919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            385 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone_lib="RPCI-98"
/clone="BACR14J09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21.1%; Score 35; DB 14.9%; Pred. No. 34; iive 73; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="end : T7
                                                                                                                                                                                                                                                                                                                                                                    fruit fly.
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                   AL065856.1 GI:4944824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity 14.9
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                             :::|| ||:
529 YSSCCBYCCB 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genoscope
                                                                                                                                                                                                                                                                     fly), gen
AL065856
143 tececaacee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154 c 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873
                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                        CNS006S5
                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BF718319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Web: www.genoscope.cns.fr.

Web: www.genoscope.cns.fr.

Determination of this BAC-end sequence was carried out as part of collaboration with the Berkeley Drosophila Genome Project (BDGP).

The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic strain y2; cn bw sp, the same strain used for the BDGP's and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://wecpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                     CNSO052P 844 bp DNA GSS 03-JUN-1999
Drosophila melanogaster genome survey sequence TET3 end of BAC #
BACR1P16 of RPCI-98 library from Drosophila melanogaster (fruit fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83 actgtggtcattgctctcacctgcctcggtggccttgcctcccgagccctgtgactccc 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23 cctgcctgctcttccctcgctcctgcattggctctgggctccatggcgctctggttg 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                      933 GCCCTGCCTTCTCTCTCTCTCCTCCCTTCTCCTCTTTCATCCGTTCTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 649 CCYYCCCCCCYYCSCCBYBCNTSCSYYSYSBCSGCSSSSSSSSSSSBYSCCCBCCCBG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila. (bases 1 to 844)
                                                 DB 141; Length 1756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                       DB 229; Length 844;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         344 others
                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone_lib="RPCI-98"
                                                                                                    48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.;
                                              Score 35.2; DB
Pred. No. 32;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 21.1%; Score 35; DB Best Local Similarity 22.3%; Pred. No. 33; Matches 29; Conservative 60; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="BACR11P16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="end : TET3"
112 c 92 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL056652.1 GI:4932342
                                              21.2%;
57.1%;
                                                                                                  64; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .844
                                              Query Match
Best Local Similarity
Matches 64; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261
```

ö

Gaps

source

FEATURES

BASE COUNT

ORIGIN

õ g δ

```
Homo sapiens
Eukaryota; Mammalia; Eutheria; Chardata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1018)
Darling,T.N., Koh,B.B and Yancey,K.B.
Delineation of Genes Expressed in Human Epidermis by Large-Scale Sequencing of a cDNA Library from Laser Capture Microdissected Skin Contact: Yancey, K.B.
Dermatclogy Branch.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="adult"
//dev_stage="adult"
//dev_stage="adult"
//note="Organ: skin, Vector: pawPl; Epidermis from 20
//note="Organ: skin, Vector: pawPl; Epidermis from 20
//organ: skin, vector: dem thick) was selectively
isolated using laser capture microdissection. Total RNA
was extracted, reverse transcribed, and directionally
cloned using uracyl DNA glycosylase (Krizman protocol 2,
see http://www.ncbi.nlm.nih.gov/
cGAP/info/libconst.cgi#Protocol2)."

a 332 c 41 g 504 t 114 others
                                                                                                                                                                                                                                                                        National Cancer Institute
Building 10, Room 12N238, 10 Center Drive MSC 1908, Bethesda, MD
20892-1908, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 ctgtggtcattgctctcacctgcctcggtggccttgcctcccgagccctgtgactccct 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                              Score 35; DB 168; Length 1018;
Pred. No. 34;
0; Mismatches 60; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="epidermis"
S81230.NIH-2 3', mRNA sequence.
BF718319
BF718319.1 GI:12017418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21.18;
54.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 54.2
Matches 71; Conservative
                                                                                                                                                                                                                                                                                                                                     Tel: 301 402 1863
Fax: 301 496 5370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            545 CCCCTTCTTC 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144 ccccaaccctc 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                            human.
                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                       JOURNAL
COMMENT
                                                                                                                                            REFERENCE
AUTHORS
TITLE
                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Оp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

Search completed: May 13, 2001, 11:39:33 Job time: 16448 sec em\_un:\* em\_vi:\* gb\_sts1:\*

em\_ro:\* em\_sts:\*

em\_sy:

em\_p1:\*

b\_sts2:\* yb\_sts3:\*

gb\_sy:\*

Sequence:

Run on:

Searched:

Database

gb\_vil:\* gb\_vi2:\* gb\_htgl:\* gb\_htg2:\*

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0
64.9
64.9
64.3
64.3
64.3
64.3
64.0
61.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176.4
176.4
176.4
174.8
174.8
174.8
174.2
165.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
                                                     May 13, 2001, 14:16:04 ; Search time 9342.78 Seconds (without alignments) 429.360 Million cell updates/sec
                                                                                                                      1 tggccttgcctccccgagcc.........cagtgaacgcagccgagaca 272
                                                                                                                                                                                                2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                          1283235 segs, 7373929652 residues
                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                      OM nucleic - nucleic search, using sw model
                                                                                                                                           IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_htg_other:*
em_htg_rod:*
em_hum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_fun:*
em_htgo_hum:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htgo_rod:*
em_htg_hum1:*
em_htg_hum2:*
em_htg_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_inv1:*
em_htg_inv2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_htg_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htg_hum8:*
                                                                                                                                                                                                                  Minimum DB seq length: 0 ... Maximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_htg_hum4:*
em_htg_hum5:*
em_htg_hum6:*
                                                                                                   US-09-451-527-89
272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_hum6:*
em_hum7:*
em_in:*
em_om:*
                                                                                                                                                                                                                                                                                                                                gb_in1:*
gb_in2:*
gb_in3:*
gb_om:*
gb_ov:*
                                                                                                                                                                                                                                                                                                                                                                                             gb_pat2:*
gb_ph:*
gb_pl1:*
gb_pl2:*
gb_pl3:*
gb_pl3:*
em_bal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum4:
em_hum5:
                                                                                                                                                                                                                                                                                                   gb_bal:*
gb_ba2:*
                                                                                                                                                                                                                                                                                         Gen Embl.
                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                            Scoring table:
```

9b\_htg10::\*
9b\_htg11::\*\*
9b\_htg11::\*\*
9b\_htg13::\*\*
9b\_htg16::\*\*
9b\_htg16::\*\*
9b\_htg16::\*\*
9b\_htg10::\*\*

gb\_htg22:\* gb\_htg23:\*

AF244915 Canis fam L06801 Homo sapien X69079 H.sapiens 1 134548 Sequence 1 AF043334 Homo sapi A29948 Coding sequ I58488 Sequence 15 AF072807 Bos tauru A29950 Nucleic aci I58489 Sequence 17 A29931 Sequence co

AF244915
HUMILI3A
HUMILI3A
HUMILI3A
1 134548
AF043334
AF043334
AF072807
I 58448
AF072807
I 58489

993

1270 1282 1292 1290 417 1297 1297 343 384 384

Description

ID

SUMMARIES

gb\_pr8:\*
gb\_pr9:\*
gb\_ro1:\*
gb\_ro2:\*

ö

ö

```
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
    SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1270)
McKenzie, A. N. J., Culpepper, J. A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., de Vies, J.E., Bancherau, J. and Zurawski, G.R.
Interleukin 13, a T cell ferived cytokine that regulates human monocyte and B cell function
                                                                                                                                                                 96 TGGCCTTGCCCCCGAGCCCTGTGACTCCCTCCAACCCTCAAGGAGCTCATTGAGGA 155
                                                                                                                                                                                                                                                                                                                            61 gctggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgtggagcgt 120
                                                                                                                                                                                                                                                          121 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                               181 cagegecatecaaaaggaececagaggatgetgaaageaetgtgeteteaaaageeeggge 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 ggccttgcctccccgagccctgtgactccctcccaaccctcaaggagctcattgaggag 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cytokine; growth factor; interleukin 13; regulatory protein.
Homo sapiens cDNA to mRNA.
Homo sapiens
                                                                                                                                                                                                                    1 tggccttgcctccccgagccctgtgactccctccccaacctcaaggagctcattgagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 176.4; DB 93; Length
Pred. No. 7e-34;
0; Mismatches 51; Indels
                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                   HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                         ;
0
                                                                                               Score 272; DB 7;
Pred. No. 1.4e-57;
                SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
448. 1302
318 c 340 q 307 t
                                                                                                                         Mismatches
                                            307
                                                                                                                                                                                                                                                                                                                                                                               336 AGGCAGATTTCCAGTGAACGCAGCCGAGACA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="GI:186276"
                                                                                                                                                                                                                                                                                                                                                                  241 agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                             б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    336
                                                                                                                       ;
0
                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.9%;
80.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 64.9
Best Local Similarity 80.3
Matches 220; Conservative
                                                                                                                         272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .443
                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polyA_site
                                                                                               Query Match
                                                                                                              Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                              3'UTR
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                HUMIL13A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                        ORIGIN
                                                                                                                                                                            g
                                                                                                                                                   ολ
                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                           AF276990 Canis fam
L42080 Homo sapien
L13029 Human inter
U10307 Human inter
AC004039 Homo sapi
AC074127 Homo sapien
AC074127 Homo sapien
AJ132441 Bos tauru
                                                                                                                                                                                                                                                                               AC074127 Homo sapi
L13028 Mouse inter
AC08432 Homo sapi
AC005742 Mus muscu
AC020886 Mus muscu
                                                                186195 Sequence 1
A29930 Sequence co
158481 Sequence 2
IS8495 Sequence 26
M23504 Mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
                                                                                                                                    I34549 Sequence 3
L26913 Rattus Norv
                                                                                                                                                                                                                                                                                                                                                                                         AB025632 Arabidops
                                                                                                                                                                                                                                                                                                                                                                                                                   AB015206 Mus muscu
Y18723 Mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (13 MAR-2000) Allergy and Immunology, Heska Corporation, 1613 Prospect Parkway, Fort Collins, CO 80525, USA Location/Qualifiers
    I58494 Sequence 24
                                                                                                                                                                                                                                                                                                                                                  AL359215 Streptomy
AP002998 Mesorhizo
AL078618 Streptomy
                            186198 Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                         AP000063 Aeropyrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis.
1 (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ223310 Streptomy
                                          Sequence 1
                 AR027065 Sequence
                                                       AR027062 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang, S., Boroughs, K.L. and McDermott, M.J.
caphine interleukin-13: molecular cloning of full-length cDNA and
expression of biologically active recombinant protein
J. Interferen Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915.1 GI:7528273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .1302, _____s
/organism="Canis familiaris"
/db_xref="taxon:9615"
1. .51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="GI:7528274"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                RATIL13A
AF276990
HUM11DC992
                                                                                                                                                                                    HUMILI3B
HSU10307
HSU31120
AC004039
AC074127
HUM11DC98Z
0 IS8494
AR027065
AS2326
AR027062
) 186195
AR027062
) 186195
A29930
IS8481
IS8495
MUSSHQS
                                                                                                                                                                                                                                                                                                                                                             AP002998
SCD16A
AB025632
AP000063
                                                                                                                                                                                                                                                                     BTA132441
AC074127
                                                                                                                                                                                                                                                                                                            AC084392
AC005742
                                                                                                                                                                                                                                                                                               MUSIL13A
                                                                                                                                                                                                                                                                                                                                      AC020886
                                                                                                                                                                                                                                                                                                                                                                                                                               MMU18723
                                                                  94
94
96
3
                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                         4410
4410
4410
336
336
                                                                                                                                                                                     4600
                                                                                                                                                                                                               5670
50282
78469
                                                                                                                                                                                                                                                                                                                                   237823
38390
347750
                                                                                                                                                             213343
                                                                                                                                                                                                                                                                                                             142732
                                                                                                                                                                                                                                                                                                                                                                           39739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cants familiaris
                                                                                                                                                                                                                                                                                                                                                                                          51440
                                                                                                                                                                                                                                                                                                                                                                                                                    1091
                                                                                                                                                                                                                                                                                                          118.2
113.6
113.6
113.6
113.5
113.5
                                                                                                                                                             9.7
                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Interi
20485146
                                                                                                                                                43
39.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ang, S.
                                                                                                                                                                                                                                                                                69.651.6
449.4
449.4
449.8
338.8
377
                                                                                                                                                                                                                                                                                                                                                                                                     36.8
36.4
36.4
36.4
                           164
164
164
163
163
128
128
128
128
117
106
                                                                                                                                                                                                                                                       9.02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                    υo
```

ä

Gaps

<u>ښ</u>

 $\sim$ 

qq

ò a

ò a ò qq ò

```
/db_xref="Swiss-prot:p35225"
/tanslation="Mailltyvialtorgraspgpvppstalrelieelvnitonok
APLONGSMWASINLFAMYCOALESLINVSGCSAIEKTQRMLSGFCPHKVSAGGFSSL
HVRDTKIEVAOFVKDLLLHKKLEREGREN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 ctggtcaacatcacccagaatc---aggcatccttgcaacggcatggtgtggagc 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 ggccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 64.9%; Score 176.4; DB 92; Length 1282; Best Local Similarity 80.3%; Pred. No. 7e-34; Matches 220; Conservative 0; Mismatches 51; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown.
Unclassified.
1 (bases 1 to 1290)
Culpepper,J., McKenzie,A., Dang,W. and Zurawski,G. Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT
                                                                                                                                            /product="NC30; alternative"
117. .452
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239 gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              342 GCTGGCAGTTTTCCAGCTTGATGTCCGAGACA 375
                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134548 1290 bp DNA
Sequence 1 from patent US 5596072.
134548
      /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="G1:673420"
                                                                                                                                                                                               /evidence=experimental
                                                                                                                                                                                                                                                                                                                     1134. .1138
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="unknown"
335 c 336 g
                                                                                                                                                                                                                                                        356. .860
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                      373. .877
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                     1153. .1157
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                  337 g
                                                                                                                                                                                                                               replace="a"
856. of
                                                                                                                  57. .116
/gene="NC30"
                                                                                                                                                                                                                           'gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                    4. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:1825339
                                                                                                                                                                                                                                                                                                                                                                                     1264.
                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                    polyA_signal 1
BASE COUNT 293 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134548.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                  sig_peptide
                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                              variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
134548
                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minty, A.J.

Direct Submitsion

Birect Submitsion

Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches,

Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE

(bases 1 to 1282)

Minty, A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C.,

Raghad, M., Labit, C., Leplatois, P., Liauzun, P., Miloux, B., Minty, C.,

Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence-experimental
//protein_id="CAA48823.1"
/db_xref="G1:50930"
/db_xref="SWISS-PROT:P3525"
/translation="MMPLLAGGEMALLITTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITONQARELONGSWWWSINLAGGYCAALESLINVSGCSAIEKTORMLSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin-13 is a new human lymphokine regulating inflammatory
                                                 /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia;
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                                                                                                                                                                                                                                                                                                     PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="NC30; alternative"
15. .455
                                                                                                                                                                                                                                           gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                         330 GCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACA 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                HSNC30 1282 bp mRNA H.saplens interleukin-13 mRNA.x69079 G1:297787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                               .ymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Caput, D
                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                        239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                     LOCUS
```

1;

```
91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A29948
mat_peptide
                                          primer_bind
                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
A29948
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                            Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MallityVialtCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGWYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSL
HYRDTKLEVAQFVKDLLLHLKKLFREGRFN"
4. .63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cycles;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (15-7AN-1998) Protein Engineering, General Institute of Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong, Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                       AF043334 417 bp mRNA PRI 21-FEB-1998
Homo sapiens interleukin 13 precursor (IL13) mRNA, complete cds.
AF043334.1 GI:2905619
                                                                                     150 CTGGTCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGC 209
                                                                                                                                 62 ctggtcaacatcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagc 118
                                                                                                                                                                                             119 gtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgac 178
                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                          Gaps
                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                              210 ATCAACCTGACAGCTGCCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGC
                                                                       2 ggccttgcctcccgagccctgtgactccctcccaaccctcaaggagctcattgaggag
                                                                                                                                                                                                                                                         179 tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                         ñ
            Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50C-lmin, 72C-3min,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 417)
Jang, J.S. and Kim, B.E.
Direct Submission
                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1) first PCR:
forward primer (5'-ctcaatcctctctgttggca-3'),
reverse primer (5'-tagtcaggtcctgtcttgc-3')
2) second PCR:
forward primer (5'-ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-gatgctttcgaagtttcagttgaa-3')
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     precursor"
           Score 176.4; DB 10;
Pred. No. 6.9e-34;
0; Mismatches 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="second PCR"
/PCR_conditions="94C-lmin, 5C
DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                     gcagggcagattccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                      /product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
           64.9%;
80.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="IL13"
           Query Match 64.9
Best Local Similarity 80.3
Matches 220; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nested PCR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
AF043334
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                     239
                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                   a
                                                                                                                                 ò
                                                                                                                                                            g
                                                                                                                                                                                             ò
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                    ΩD
                                                                                                                                                                                                                                                                                                                     ò
                                                                        ò
```

```
15. .455
/codon_start=1
/cransl_table=11
/rransl_table=11
/product="protein with cytokine like activity"
/product="caa01982.1"
/protein_id="Caa01982.1"
/db_xref=0=1:1249029"
/translation="MHPLIAPLILAGIMALLITTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITQNOKAPLCNGSWWSINLTADMYCAALESLINVSGCSAIEKTQRMLSG
FCFPNTKOSAGFSSLHVRPTKIEVPRYKDLLLHLKKLFREGRFN"
336 g 311 t
                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 229 TGCAGTGCCATCGAGAAGACCCAGAGGATGCTGGGCGGATTCTGCCCGCACAAGGTCTCA 288
                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms Patent: EP 0506574-A 21 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                       119 gicaaccigaccgccggcatgiacigcgcagcictagaaicicigaicaaigiciccgac
                                                                                                                                                                                                                                                        2 ggccttgcctccccgagccctgtgactcctccccaaccctcaaggagctcattgaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179 tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein with cytokine like activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ë
                                                                                                                                                                                     Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1297;
                                                                                                                                                                                                  Pred. No. 2e-33;
0; Mismatches 52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 174.8; DB 9;
Pred. No. 1.7e-33;
0; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="synthetic construct"
/db_xref="taxon:32630"
                                                                                                                                                                                     DB
                                                                                                                ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    239 gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 174.8;
                                                                                                              97
                                                         13"
                  64. .399_______/gene="1113"
/gene="1113"
/product="interleukin 1
complement(394. .417)
/note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                108
/gene="IL13"
64. .399
                                                                                                                                                                               Query Match
Best Local Similarity 79.9%;
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 1297)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64.38;
79.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Coding sequence for A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A29948.1 GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 64.3
Best Local Similarity 79.9
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. 1297
                                                                                                                w.
```

g ò qq ò qq ò q ò QQ

```
/codon_start=1
/product="interleukin-13 precursor"
/product="interleukin-13 precursor"
/protein_id="AAD22248.1"
/db_xref="f01:#258814"
/translation="MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITQNQK
VPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQFTKRMLNALCPHKPSAKQVSSE
                                                                                                                     1 (bases 1 to 343)
Trigona,W.L., Brown,W.C. and Estes,D.M.
Functional implications for signaling via the IL4R/IL13R complex on
                                                              Bos taurus
Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                   Trigona,W.T., Hirano,A. and Estes,D.M.
Trigona,W.T., Hirano,A. and Estes,D.M.
Direct Submission
Submitted (16-JUN-1998) Veterinary Pathobiology, University of Missouri-Columbia, W213 Veterinary Medicine Building, Columbia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105 GCTGGTTAATATCACCCCAGAACCAGAAGGTGCCGCTGTGCAATGGCAGCATGGTGTGGAG 164
                                                                                                                                                                                                                                                                                                                           1. .343
/organism="Bos taurus"
/db_xref="taxon:9913"
//cell_type="activated peripheral T lymphocytes"
//gene="IL-13"
//gene="IL-13"
1. .>343
                                                                                                                                                                          Vet. Immunol. Immunopathol. 72 (1-2), 73-79 (1999)
20080132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 174.2; DB 7;
Pred. No. 2.9e-33;
0; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          285 AGCTAAGCAGGTTTCCAGTGACGTCCGAGACA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggcagggcagattccagtgaacgcagccgagaca
                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            æ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YVRDTKIEVAQF"
                    GI:4558813
                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A29950 384 bp
Nucleic acid fragment
A29950
A29950.1 GI:1249030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64.08;
79.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 79.6
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                   bovine cells
                    AF072807.1
                                                                                                                                                                                                                                                                                             65211, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                         10614495
       AF072807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                             source
                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                          MEDLINE
PUBMED
REFERENCE
                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                         REFERENCE
                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
A29950
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                   l (bases 1 to 1297)
Caput.D., Ferrarat,P., Guillemot,J., Kaghad,M., Labit-Le
Caput.D., Ferrarate,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
Location/Qualifiers
                                                                                                                      gicaaccigaccgccggcatgiactgcgcagctctagaatctctgatcaatgictccgac 178
                                                                                                                                                                                             gtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgac 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         222 ATCAACCTGACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGC 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 222 ATCAACCTGACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAAGGC 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF072807 343 bp mRNA MAM 21-JAN-2000
Bos taurus interleukin-13 precursor (IL-13) mRNA, partial cds.
                                                                                                                                                                                                                                                                                                                                       07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                            ctggtcaacatcacccagaatc...aggcatccttgcaacggcagcatggtgtggagc
                                                                                                                                                                             tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 174.8; DB 10;
Pred. No. 1.7e-33;
0; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ب
                                                                                                                                                                                                                                    239 gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                    gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   336 g
                                                                                                                                                                                                                                                                                                                                                 Sequence 15 from patent 158488
158488
158488.1 GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 79.9%;
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                    1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1297
                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                      58488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                           62
                                                                                       162
                                                                                                                     119
                                                                                                                                                                           179
                                                                                                                                                                                                      282
                                                                                                                                                                                                                                                              342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            342
                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
AF072807
                                                                                                                                                                                                                                                                                                      RESULT
IS8488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
```

ORIGIN

g ò q ò qq δ a ò g

LOCUS

1;

Gaps

3;

Indels

Length 343;

23-JUN-1995

PAT

õ

Oy 71 atcacccagaatcaggcatccttgcaacggcagcatggtggagcgtcaacctg 127	RESULT 11 A29931 LOCUS DEFINITION A29931 Sequence coding for the mature cytokine like protein. ACCESSION A29931.1 G1:1249019 KEYWORDS SOURCE ORGANISM STITIGIAL Sequence. REFERENCE ORGANISM AUTHORS Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le REFERENCE 1 (bases 1 to 336) AUTHORS Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le BOUTELIBER'C., Leplatois, P., Magazin, M. and Minty, A. TITLE REPORTED TOTAIN Type activity, recombinant DNA coding for this protein having cytokin type activity, recombinant DNA coding for this protein, transformed cells and microorganisms JOURNAL Protein having cytokin type activity, recombinant DNA coding for this protein having cytokin type activity, recombinant DNA coding for this protein having cytokin type activity, recombinant DNA coding for this protein having cytokin type activity, recombinant DNA coding for this protein. transformed cells and microorganisms JOURNAL BLOCHING CARLIERS  SOURCE ACTIVED	Query Match         60.7%;         Score 165.2;         DB 9;         Length 336;           Best Local Similarity         80.2%;         Pred. No. 5e-31;         3;         Gaps           Matches 207;         Conservative 0;         Mismatches 48;         Indels 3;         Gaps           QY         18         gccctgtgactccctcccaaccctcaaggaqctcattgagagctggtcaacctgacaccaccc         61           QY         78         agaatcaggcatccctctgcaacggcagcafcafcafcafcafcafcafcaff         11           Db         62         Acaccagaagctctagaatctctgatcaatgctccaarggcagcagcagcagcagcagcagcagcagcagcagcagca
SOURCE Synthetic construct.  ORGANISM SYNthetic construct  ALIIICAL SEQUENCE.  REFERENCE 1 (bases 1 to 384) AUTHORS Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le. BOULELILE. (C., Leplatois, P., Magazin, M. and Minty, A. FITLE Protein having cytokin type activity, recombinant DNA coding for this protein, transformed cells and microorganisms JOURNAL PACENT: EP 0506574-A 23 30-SEP-1992; ELF SANOFI  FEATURES 1. 384 Cocation/Qualifiers 1. 384 Corganism="synthetic construct"  Ab_xref="taxon:32630"  Ab_xref="taxon:32630"  ORIGIN	Query Match         61.0%;         Score 165.8;         DB 9;         Length 384;           Best Local Similarity 79.2%;         Pred. No. 3.5e-31;         Agaps 1;           Matches 210;         Conservative 0;         Mismatches 52;         Indels 3;         Gaps 1;           QY 11 tccccgagccctgtgactccctcccccaaccctcaaggagctcattgaggagctggtcaac 70 11111	TESULT   10   158489   384 bp   DNA

```
1;
C., Kaghad,M., Labit-le
lin,M. and Minty,A.
Y. recombinant DNA coding for
microorganisms
                                                                                                                                                                            gtggagcgtcaacctgaccgcg 134
                                                                                                                                                                                                           gcccgcggcagggcagattcca 254
                                                                                                           DB 9; Length 336;
31;
; 48; Indels 3; Gaps
                                                                                                                                            07-OCT-1997
                                                                                                                                                                                                                                                                                                                                   PAT
                                                              ruct"
```

174 184 234 244 294

124

```
1 (bases I to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic
microorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 184
                                                                                                                                                                                                                                             10-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 gectececgagecetgtgaetecetececaacecteaaggageteattgaggagetggte 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12-DEC-1997
   ctgaccgccgcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                  gccatccaaaggacccagaggatgctgaaagcactgtgctcaaaagcccgcggggagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                            PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 164; DB 10;
Pred. No. 9.6e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 9.6e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                             DNA
S 5700665.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A52326 4410 bp DNA
Sequence 1 from Patent BP0725140.
A52326
A52326.1 GI:2851987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       272
                                                                                                                                                     245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                               CAGTTTTCCAGCTTGCATGTCCGAGACA 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTTTTCCAGCTTGCATGTCCGAGACA 322
                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
116 c 110 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                   б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagatttccagtgaacgcagccgagaca
                                                                                                                                                                                                                                    Sequence 4 from patent US 186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60.3%; 3
                                                                                                                                                                                                                                                                                GI:3205916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 60.3
Best Local Similarity 78.4
Matches 210; Conservative
                                                                                                                                                                                                                                                                                                                      Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unidentified
unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                   100 a
                                                                                                                                                                                                                                                                               186198.1
                                                                                                                                                                                                                                                                                                          Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                            235
                                                                                                                                                                              295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295
                                                     125
                                                                                                     185
                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                   RESULT
186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                             rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pp
                       QQ
                                                  οy
                                                                          QQ
                                                                                                     ŏ
                                                                                                                            g
                                                                                                                                                      δy
                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ξ,
                                                              1 (bases 1 to 336)
Caput, D., Ferrara, V. Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minry, A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 565213-A 24 29-JUL-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    proteins from prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                 195 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                   182 AGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                  agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 GCCCTGTGCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 61
                                                                                                                                                                                                                                                                               18 gecetytyaeteeeteeceaaceeteaaggageteattyaggagetygteaacateaeee 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-SEP-1999
                                                                                                                                                                                                                                                        .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                              Score 165.2; DB 10; Length 336;
Pred. No. 5e-31;
0; Mismatches 48; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unclassiire.

1 (bases I to 425)

1 (bases I to 425)

Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic pr
microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60.3%; Score 164; DB 9; L
ilarity 78.4%; Pred. No. 9.6e-31;
Conservative 0; Mismatches 55;
                                                                                                                                                                              u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ų
                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AR027065 425 bp DNA
Sequence 4 from patent US 5856142.
AR027065.1 GI:5937905
                                                                                                                                                                 /organism="unknown"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="unknown"
116 c 110 g
                                                                                                                                                                                б
                                                                                                                                                                                                                              60.7%;
80.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242 GCTTGCATGTCCGAGACA 259
  GI:2477732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255 gtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                      Matches 207; Conservative
                                                                                                                                                      .336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified.
                                                   Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match
Best Local Similarity
Matches 210; Conserv
                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
  158494.1
                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                        Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown
                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                      source
                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                7.8
                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                               REFERENCE
                                                                            AUTHORS
                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
AR027065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
               KEYWORDS
                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
VERSION
                                                                                                    TITLE
                            SOURCE
                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                               õ
```

ij,

Gaps

3;

234

```
ij
                                                                                                                                                                                                                                                                          283: .337
/once-"SEQUENCE DE LA REGION 5' NON TRADUITE DU MESSAGER"
338 . .762
/note-"SEQUENCE CODANT POUR LE PRECURSEUR DE L'IL-13"
1 (bases 1 to 4410)
Legoux, R., Maldonado, P. and Salome, M.
Process of extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine
Patent: EP 0725140-A 1 07-AUG-1996;
SANOFI SA (FR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125 cigaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccggcgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 60.3%; Score 164; DB 9; Length 4410; Best Local Similarity 78.4%; Pred. No. 7e-31; Matches 210; Conservative 0; Mismatches 55; Indels
                                                                               Other publication SK 10696 960904
Other publication CZ 9600290 960814
Other publication FI 96427 960801
Other publication FI 96427 960801
Other publication PL 312343 960805
Other publication NO 96396 960805
Other publication CA 2168382 960802
Other publication AU 4224496 960801
Other publication AU 4224496 960801
                                                                                                                                                                                                                                   organism="unidentified"
                                                                                                                                                                                                                                          /db_xref="taxon:32644"
|- .282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1078
                                                                                                                                                                                                                                                                                                                               terminator
terminator
                                                                                                                                                                                                                                                                                                                                                                       terminator
                                                                                                                                                                                                                                                                promoter
5'UTR
                                                                                                                                                                                                                                                                                                       misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                           misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                        source
  REFERENCE
AUTHORS
TITLE
                                                       JOURNAL
                                                                                                                                                                                                          FEATURES
                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

Search completed: May 13, 2001, 14:16:09 Job time: 18849 sec

Run on:

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                gb_htg16:*
gb_htg17:*
gb_htg19:**
gb_htg20:*
gb_htg21:*
gb_htg21:*
gb_htg21:*
gb_htg22:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match Length DB
                                                                                            gb_sts2:*
gb_sts3:*
gb_sy:*
                                                                                     jb_sts1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_pr6:*
gb_pr7:*
gb_pr8:*
gb_pr9:*
gb_ro1:*
                                                em_sts:*
          em_pat:*
                           em_pl:*
em_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                       gb_pr2:*
gb_pr3:*
gb_pr4:*
gb_pr5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1282
1290
1297
1297
3714
4600
4740
5670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0 213343
                                                                                                                                  gb_vil::
gb_vi2::
                                                         em_sy:*
                                                                 em_un:*
                                                                                                                                                      Jb_htg1
em_ov:*
                                                                                                                         *: un_q£
                                                                           em_vi:*
                                                                                                                                                                                                                                                                                                                                                                                             gb_pr1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 υ
                                                             May 13, 2001, 09:02:00 ; Search time 9342.78 Seconds (without alignments) 262.036 Million cell updates/sec
                                                                                                                       1 ctcagcttaggccagcctac......taaggagctcatt 166
                                                                                                                                                                                        2566470
       GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                     1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                            OM nucleic - nucleic search, using sw model
                                                                                                                                         IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_inv1:*
em_htg_inv2:*
em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
em_htg_hum1:*
em_htg_hum1:*
                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                    US-09-451-527-88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htg_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_htg_hum7:
em_htg_hum8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_htg_hum3
em_htg_hum4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_htg_hume
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htg_hum5
                                                                                                                                                                                                                                                                                                                                                      gb_ov:*
gb_pat1:*
gb_pat2:*
gb_pat2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_hum5:*
em_hum6:*
em_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_hum2:*
em_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                            gb_pll:*
gb_pl2:*
gb_pl3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                      gb_p14:*
em_ba1:*
em_ba2:*
em_fun:*
                                                                                                                                                                                                                                                                                     gb_ba1:*
gb_ba2:*
gb_ba3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_hum1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_in:*
                                                                                                                                                                                                                                                                                                                 gb_in1:
gb_in2:
gb_in3:
                                                                                                                                                                                                                                                                                                                                            #:шo_dg
                                                                                                                                                                                                                                                                            GenEmbl:
                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                            Database :
                                                                                                                        Sedneuce:
                                                                                                                                                                     Searched:
```

AF276990 Canis fam AF244915 Canis fam LO6801 Homo sapien X69079 H.sapiens i

Description

Ω

SUMMARIES

A29948 Coding sequence 15 L42080 Homo sapien L13029 Human inter U10307 Human inter U31120 Human inter

78 AF276990 7 AF244315 93 HUMIL13A 92 HSNC30 10 134548 9 A29948 10 158488 31 HUMIL1DC992 31 HSU31120 3 HSU31120

ession numbe 16269: 24613: 4 28694: 5 31694: 5 32391: 2 36538:	1950/: CONTIGUE OF THE ASSOCIATION OF THE ASSOCIATI	* 108419 113608: contig of 5250 bp in length  * 113669 116446: contig of 2770 bp in length  * 116447 148106: contig of 2770 bp in length  * 116447 148106: contig of 3160 bp in length  * 155038 170050: contig of 6931 bp in length  * 155038 170050: contig of 6931 bp in length  * 155038 170050: contig of 52780 bp in length  * 170051 196830: contig of 6005 bp in length  * 196831 202835: contig of 6005 bp in length  * 202836 213343: contig of 10508 bp in length  * 202836 213343: contig of 10508 bp in length  * 202836 213343: contig of 10508 bp in length  * Action/Qualifiers  Location/Qualifiers  * Action="Real" Canis familiaris"  / Abxref="taxon:9615"  / Chonsonme=""Action="Real" Canis familiaris"  / Chone="Real" Canis familiaris familiaris"  / Chone="Real" Canis familiaris familiaris familiaris familiaris familiari	114516 CTCAGCTTAGGCCAGCCTGCTGCTTTCCCTGCTCTCTGCTTGGTTGG
53.3 50282 85 AC004039 53.3 78469 75 AC074127 47.2 3520 7 BTA132441 44.8 417 88 AF04334 41.3 34.9 AF072807 35.9 102 10 158483 35.9 102 10 158483 34.8 1207 94 MUSSICPE 34.8 1212 10 134549 34.8 14273 28 AC084392 34.8 145560 44 AC08742	57.8 34.8 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 129200 54.6 12920 54.6 12	RESULT 1 AF276990,c LOCUS AF276990 213343 bp DNA HTG 29-SEP-2000 LOCUS Canis familiaris chromosome 4 clone RPCI-81 390C13, *** SEQUENCING IN PROGRESS ***, 25 ordered pieces. ACCESSION AF276990 1 G1:9964079 KEYWORDS GOGY AF276990 1 G1:9964079 AF27690 1 G1:9964079 AF27690 1 G1:9964079 AF27690 1 G1:9964079 ACTIVE Canis familiaris ACTIVE ACTIVE CONSERVATION OF NOROCODING SEQUENCES revealed by three-Way JOURNAL Genome Res. 10 (9), 1304-1306 (2000) ACTIVE CONSERVATIONS ACTIVE CONSERVATION OF NOROCODING SEQUENCES revealed by three-Way JOURNAL Genome Res. 10 (9), 1304-1306 (2000) ACTIVE SPERENCE ACTIVE CONSERVATION ACTIVE SPECIAL OF ACTIVE CONSERVATION ACTIVE CONSERVA	* NOTE: This is a 'working draft' sequence. It currently * consists of 25 contigs. Gaps between the contigs * are represented as runs of N. The order of the places * is believed to be correct as given, however the sizes * of the gaps between them are based on estimates that have * provided by the submittor. * This sequence will be replaced * by the finished sequence as soon as it is available and

; 0

120 114397

114457

de

DEFINITION

AF244915

REFERENCE AUTHORS TITLE

```
/product="interleukin 13"
/protein_id="aAA36107.1"
/db_xref="GI:186276"
/translation="MALLLTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNOSWWWSINLFAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGGFSSL
HVRDYKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches, Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE 2 (bases I to 1282)
Minty,A.J., Chalon,P., Derocq,J.M., Dumont,X., Guillemot,J.C., Kaghad,M., Labit,C., Leplatois,P., Liauzun,P., Miloux,B., Minty,C., Casellas,P., Loison,G., Lupker,J., Shire,D., Ferrara,P. and
1 (bases 1 to 1270)
McKenzie,A.N.J., Culpepper,J.A., de Waal Malefyt,R., Briere,F.,
Punnonen,J., Aversa,G., Sato,A., Dang,W., Cocks,B.G., Menon,S.,
Vries,J.E., Banchereau,J. and Zurawski,G.R.
Interleukin-13, a T·cell-derived cytokine that regulates human
monocyte and B cell function
Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14 CCTCAATCCTCTCTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 53.3%; Score 88.4; DB 93; Best Local Similarity 80.0%; Pred. No. 1.3e-13; Matches 104; Conservative 0; Mismatches 26;
                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSNC30 1282 bp mRNA H.sapiens interleukin-13 mRNA. X69079 X69079.1 GI:297787
                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336 g
                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minty, A.J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .ymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggagctcatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caput, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134
                                                                                                                                                                       MEDLINE
                           REFERENCE
                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/product="interleukin-13"
/product="interleukin-13"
/protein_id="AAR63204_1"
/bcreein_id="T528274"
/translation="MALMITYVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
SLCNGSMVWSYNLTAGNYCAALESLINVSDCSAIQRTGRMLKALCSGRFAAGGISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
1. 1302
                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases 1 to 1302)
Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13; molecular cloning of full-length cDNA and expression of biologically active recombinant protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17 ctacgacctgcctgctcttccctcgctcctgcattggctctggggtccatggcgctc 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytokine; growth factor; interleukin 13; regulatory protein. Homo sapiens cDNA to mRNA. Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90.4%; Score 150; DB 7; Length 1302; 100.0%; Pred. No. 7.2e-30; ive 0; Mismatches 0; Indels
                     Db 114396 CTCCCCGAGCCCTGTGACTCCCTCCCCCAACCAGGAGCTCATT 114351
                                                                                                                                             AF244915 1302 bp mRNA MAM 1.
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
AF244915.1 GI:7528273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMIL13A 1270 bp mRNA PRI
HOMO Sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 ACTCCCTCCCCAACCCTCAAGGAGCTCATT 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137 actecetececaaceeteaaggageteatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 340 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L06801.1 GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 150; Conservative
                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                        20485146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
```

source

FEATURES

TITLE JOURNAL

MEDLINE PUBMED AUTHORS

REFERENCE

JOURNAL

5'UTR CDS

BASE COUNT ORIGIN

õ g ò g ò

3'UTR

KEYWORDS SOURCE ORGANISM

DEFINITION

HUMIL13A

ACCESSION

VERSION

ö

Gaps

; 0

```
GI:1825339
                                                    Unclassified
                                                                                                                                                                                                                                                                                                                                                                                     ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                GGAGCTCATT 143
                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 104; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                 ಥ
134548.1
                         Unknown
                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                      ORGANISM
                                                                                            TITLE
JOURNAL
                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                     157
                                                                                                                                                                                                                                                                                                                                                                                                               134
                                                                  REFERENCE
                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
/ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Locus
                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                         Op
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                      /translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                        /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                          /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                             /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86 TCTCACTTGCCTTGGCGGCTTTGCCTCCCAGGCCCTGTGCCTCCTCTACAGCCCTCAG 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 CCTCAATCCTCTCTGTTGGCACTGGGCCTCTTGTTGTTGTTGACCACGGTCATTGC 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 88.4; DB 92;
Pred. No. 1.3e-13;
                                                                                                                                  /evidence=experimental
/protealo_id="CAA48883.1".
/db_xref="G1:58030"
/db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                   /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="G1:673420"
/db_xref="SWISS-PROT:P35225"
                                                  product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                          product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134548 1290 bp DNA
Sequence 1 from patent US 5596072.
134548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'evidence-experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      856. .860
/note="ATTTA motif"
873. .877
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="ATTTA motif"
1264. .1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1134. .1138
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                      codon_start=1
                                                                                                                                                                                                                                             /gene="NC30"
                                                                             /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                             /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /replace="a"
856. .860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53.3%;
80.0%;
           'gene="NC30"
                                    /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="NC30'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146 GGAGCTCATT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polyA_signal
                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                        mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                 s1g_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
ACCESSION
gene
                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIBING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELEEEVNITONQKAPLCNGSWWSINLTADMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGGFSSLHVRDYKIEVAGFVKDLLLHLKKLFREGRFN"
341 c 341 c 336 g 311 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                     97 teteacetgeeteggtggeettgeetecegageetgtgaeteeteeaaceteaa 156
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                           14 CCTCAATCCTCTCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGTTCACCACGGTCATTGC 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   artificial sequence.

1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Boutciller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms
Elf SANOFI
                                                                                                                                                                                                                                                                                           37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37 cetegetectectgeattggetetgggetecatggegetetggttgaetgtggteattge 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Coding sequence for protein with cytokine like activity. A29948
                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=11
/product="protein with cytokine like activity"
/protein_id="CAA01982.1"
/db_xref="G1:1249029"
                                                                                                                                                                                                                 Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1297;
                     Zurawski, G.
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 88.4; DB 10;
Pred. No. 1.3e-13;
0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 88.4; DB 9;
Pred. No. 1.3e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                     ı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
1 (bases 1 to 1290)
Culpepper.J., McKenzie,A., Dang,W. Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
                                                                                                                                     311
                                                                           Location/Qualifiers
                                                                                                               /organism="unknown"
335 c 336 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53.3%;
80.0%;
                                                                                                                                                                                                                 53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A29948.1 GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthetic construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       synthetic construct
                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                               .1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

S

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1047 a
                                                                                                                                                                           Ø
                                                                                (none)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HUMIL13B
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (Bases I to 3714)

Martin,C.H., Bondoc,M.M., Chiang,A., Cloutier,T., Davis,C.A., Ericsson,C.L., Jaklevic,M.A., Kim,R.J., Lee,M.T., Li,M., Mayeda,C.A., Steiert-El Kheir,A. and Palazzolo,M.J.

Sequencing of the interleukin growth hormone cluster on chromosome Unpublished (1995)
                                                                                                                                                                                                                                                                                                                        l (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin growth hormone cluster on chromosome 5 (5q31).
Homo sapiens (tissue library: Subclones in Homo sapiens from Pl
                              97 totcacctgcctcggtggccttgcctcccggagccctgtgactcccccaaccctcaa 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26 CCTCAATCCTCTCCTGTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-MAY-1995
                                                                                                                                                                                                      07-0CT-1997
26 CCTCAATCCTCTCTCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (subclone 3_f2 from P1 H11) DNA sequence. L42080 L42080. Interlent:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                        PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53.3%; Score 88.4; DB 10;
80.0%; Pred. No. 1.3e-13;
1ive 0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ¥
                                                                                                                                                                                         138488 1297 bp DNA
Sequence 15 from patent US 5652123.
158488
                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="unknown"
341 c 336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence submitted by:
Human Genome Center and
                                                                                                                                                                                                                                               I58488.1 GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone H11) DNA.
Homo sapiens
                                                                                                                                                                                                                                                                                                            Unclassified.
                                                                                          157 ggagctcatt 166
                                                                                                                        146 GGAGCTCATT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146 GGAGCTCATT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309 a
                                                                                                                                                                                                                                                                             Unknown.
                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
HUM11DC992/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
COMMENT
                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                     RESULT
                                                                                                                                                                                    I58488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
g
                               à
                                                          qq
                                                                                          ò
                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
MCKerzie, A. N.J., Li,X., Largaespada,D.A., Sato,A., Kaneda,A.,
Zurawski,S.M., Doyle,E.L., Milatovich,A., Francke,U.,
Copeland,N.G., Jenkins,N.A. and Zurawski,G.
Structural comparison and chromosomal localization of the human and
                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                             1. .3714 ... //organism="Homo sapiens" //organism="Homo sapiens" //db_xref="taxon:9606" //tissue_lib="subolones in Homo sapiens from Pl clone H11" a 1018 c 1109 g 843 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 4600)
                                                                                                                                                                                                                                                                                                                                                                                                                                1963 cercaarcerereserradeaeradedecrearadecerrirerranceaecaegaearrae 1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1903 TCTCACTTGCCTTGGCGGCTTTGCCTCCCCAGGCCCTGTGCCTCCTCTACAGCCCTCAG 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P1
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                               octogotoctoctgoattggctctggggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-JUL-1993
Lawrence Berkeley Laboratory
Berkeley, CA 94720
e-mail: seq@enome.lbl.og
This subclone overlaps H11 8_a1.
The P1, from which this subclone is derived, is adjacent to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   interleukin 13.
Homo sapiens (library: EMBL-3 SP6/T7) female placenta DNA.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                               Length 3714;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 4600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMIL13B 4600 bp DNA PRI 27
Human interleukin-13 gene sequence with four exons.
L13029
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 88.4; DB 93;
Pred. No. 1.1e-13;
                                                                                                                                                                                                                                                                                                             Score 88.4; DB 93;
Pred. No. 1.1e-13;
0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="placenta"
/tissue_lib="EMBL-3 SP6/T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mouse IL-13 genes
J. Immunol. 150, 5436-5444 (1993)
93294299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2266. .2370
/number=3
                                                                                                                                                                                                                                                                                                               53.3%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.3%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2717. .>3651
/number=4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1960. .2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L13029.1 GI:307044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . .903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1320 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'number=2
                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .4600
                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1843 GGAGCTCATT 1834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157 ggageteatt 166
```

```
2213 GGAGCTCATT 2222
                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                               LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intron
                                                                                                          ACCESSION
VERSION
                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                  HSU31120
                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                            TITLE
                                                       RESULT
                                                                                                                                                 SOURCE
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MALLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
YPDCNGSMYWSINLTAGMYCAALESIINVSGCSAIEKTORMLSGFCPHKVSAGFSSLH
VRDTKIEVOPVKDLLHHKLFREGRFN"
1444 c 1305 g 968 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (02-JUN-1994) Dmitry V. Smirnov, Shemyakin and
Ovchlnnikov Institute of Bioorganic Chemistry, ul.Miklukho-Maklaya
16/10, Moscow V-437, 117871 GSP7, Russia
                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 4740)

Smirnov, D.V., Smirnova, M.G., Korobko, V.G. and Frolova, E.I.
Tandem arrangement of human genes for interleukin-4 and Gene 155 (2), 277-281 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2093 CCTCAATCCTCTCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 2152
                                                                             2124. .4176
/gene=1113.
/gene=11113.
/gene=11113.
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37 octogetectectgoattggetetgggetecatggegetetggttgaetgtggteattge 96
                                                                                                                                                                                                                                21-DEC-1995
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 88.4; DB 93; Length 4740;
Pred. No. 1.1e-13;
0; Mismatches 26; Indels 0;
26; Indels
                                                                                                                                                                                                                       HSU10307 4740 bp DNA PRI
Human interleukin 13 (IL13) gene, complete cds.
U10307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
"ba_xref="texon:5606"
/clone_lib="human genome library"
/cell_type="leukocyte"
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="interleukin 13"
/protein_id="AAA83738.1"
/db_xref="GI:1127548"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'tissue_type="blood"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53.3%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 4740)
Smirnov, D.V.
                                                                                                                                                                                                                                                                        U10307.1 GI:505626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 53.3
Best Local Similarity 80.0
Matches 104; Conservative
Conservative
                                                                                                                                                 861 GGAGCTCATT 870
                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                  157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                    human.
Matches 104;
                                                                                                                                                                                                                                          DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                       RESULT 1
HSU10307
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                              Db
                                                                             à
                                                                                                       g
                                                                                                                                  ò
                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
```

```
Bukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases I to 5670)
Dolganov,G., Bort,S., Lovett,M., Burr,J., Schubert,L., Short,D., McGurn,M., Gibson,C. and Lewis,D.B.
Coexpression of the interleukin-13 and interleukin-4 genes correlates with their physical linkage in the cytokine gene cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="interleukin-13 precursor"
/protein_id="AaB01681.1"
/db_xref="G1:1045452"
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNOK
APLCNSWWWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   join(2274. .2345,3403. .3456,3709. .3813,4160. .4267)
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .4267)
  DNA 05-JUN-1996 (IL-13) precursor gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (06-JUL-1995) Gregory M. Dolganov, Human Genetics,
Genelabs, Inc., 505 Penobscot, Redwood City, CA 94063, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .3813,4160.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .3813,4160.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_type=other
/rpt_family="Alu-repeat, left monomer"
2158. 25095
/gene="IL-13"
/gene="IL-13"
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="interleukin-13 precursor"
join(2214. .2345,3403. .3456,3709. .
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(2158. ...2345,3403....3456,3709.
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /function="cytokine"
/evidence=experimental
/product="interleukin-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .5670
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="58D9"
                                                                                                                                                                                                                                                                                                        on human chromosome 5q23-31
Blood 87 (8), 3316-3326 (1996)
96184791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /map="5q23-31"
1360. .1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="IL-13"
/gene="IL-13"
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="IL-13"
/160.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2346. .3402
/gene="IL-13"
3403. .3456
/gene="IL-13"
3457. .3708
/gene="IL-13"
3709. .3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2214. .2273
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4160. .5095
/gene="IL-13"
HSU31120 5670 bp
Human interleukin-13
U31120
                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 5670)
Dolganov, G.M.
                                                                 U31120.1 GI:1045451
```

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                misc_feature
                                                                                                                                                             misc_feature
                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 50282)

Connolly,K.S., Gunning,K.M., Davis,C.A., Kadner,K., Subramanian,S., Miguel,T., Lewis,K.D., Fridiyand,J., Alcivare,D., Benke,J.A., Enddoc,M., Bowen,E., Chiang,A., Critz,P., Jaklevic,M.A., Lindo,K., Lindquist,K., Miller,C., Patel,S., Piscia,C., Riley,B.E., Rojeski,H., Sarmlento,R., Yu,C., Montenegro,M., Moise,H., Squancholo, Stultz,J.L. and Martin,C.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOE Joint Genome Institute
For further information about this sequence, including its location
and relationship to other sequences, please visit the sequence
archive Website (http://www.hgc.lbl.gov/sequence-archive.html) or
send email to human@genome.lbl.gov.
                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                  2183 CCTCAATCCTCTCCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 50282)
Ricke, D.O. and Wagner, R.P.
Large Scale Sequence Analysis and Annotation with the Sequence Comparison Analysis (SCAN) System
                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA PRI 27-JAN-1998
5, Pl clone 876h9, Pl 5116 (LBNL H11),
                                                                                                                                                                                                       37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                             ö
                                                                                                                                               Length 5670;
                                                                                                                                                                            Indels
                                                                                                                                          Score 88.4; DB 93;
Pred. No. 1e-13;
0; Mismatches 26;
                                                                                  1169 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Socation/Qualifiers
                                                                              1582 g
4831. .4878
/rpt_type=direct
5076. .5081
/gene="IL-13"
5522. .556
a 1676 c 1582 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens chromosome complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC004039.1 GI:2811101
                                                                                                                                           53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                             50282 bp
                                                                                                                                          Query Match 53.3°
Best Local Similarity 80.0°
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                              2303 GGAGCTCATT 2312
                                                                                                                                                                                                                                                                                                                                 157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                              repeat_region 5
COUNT 1243 a
                                                                                                                                                                                                                                                                                                                                                                                                                                           AC004039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC004039
   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          naman.
                                   polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
AC004039/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                 δ
```

```
3680. 3844
/note="100% identity"
/db_ref="dbEST:AA206961"
4061. 4186
/note="KIF3 Kinesin-like protein exon"
4515. 4642 Xinesin-like protein exon"
5030. 5103
/rpt_family="L1"
/rpt_family="L1"
/rpt_family="L1"
/rpt_family="L1"
                                                                                                                                                          3103. .3267
/note="KIF3 Kinesin-like protein exon"
3550. .3844
/note="KIF3 Kinesin-like protein exon"
3680. .3844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7434. 7559
7434. 7559
7604e=*KIF3 Kinesin-like protein exon"
763. 8053. 8053
7rpt_family="Alu"
complement(8968. 9212)
7rpt_family="Alu"
10045. 10095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="KIF3 Kinesin-like protein exon"
complement(10046. 10446)
/note="99% identity yy34f12.s1"
/db_xref="dbEST:H44415"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="Alu"
11701. 11982
/note="998 identity aa03d08.rl"
/db_xref="dbEST:AA455404"
complement(12267. 12657)
/rpt_family="Alu"
/rpt_family="Alu"
13560. 13974
                                  /note="LBNL H11"
1. :50282
/note="97% identity GEN-173B03"
/db_xref="dbEST:D61259"
1908. .2165
/note="99% identity EST39144"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S827_ .7179

rpt_family="Alu"

7249_ .756

note="98% identity zd58a07.rl"

'db_xref="dbEST:W75947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10401. .10900
/note="99% identity ze48b09.rl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="98% identity yi44e06.rl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="Alu"
complement(15170. 15463)
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(18034. .18347)
/rpt_family="AluJb"
complement(18849. .19136)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(14294. .14724)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(15755. .16111)
/rpt_family="Alux"
                                                                                                                                                  /db_xref="dbEST:AA334870"
3103. .3267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(14795. .15108)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  db_xref="dbEST:AA001064"
1198. .11576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(5215. .5510)
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'db_xref≈"dbEST:R69140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rpt_type=tandem
                      /chromosome="5"
/clone="876h9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rpt_unit=T
```

```
complement (24145. .24243)
/note="IL-4 interleukin-4"
24730. .24807
/rpt_family="MIR"
complement (26844. .27018)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / 28035. 28144 // rpt_family="MER5" // rpt_family="MER5" // rpt_family="MIR" // soft // soft // soft // soft // soft // soft // rpt_type=tandem // rpt_unit=AC // soft // rpt_unit=AC // rpt_type=tandem // rpt_unit=AC // rpt_type=tandem // rpt_unit=AC // rpt_unit=AC // rpt_unit=AC // rpt_tandem // rpt_family="All" // rpt_famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (3412. ..33715)
/rpt_family="AluJo"
complement (34058. .34363)
/rpt_family="Alu"
34062. .34081
                                                                                                                                                                                                                                            /rpt_unit=A
complement(20820. .21191)
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_unit=AC
complement(23934. 24400)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(32534. .32678)
/note="IL-4 interleukin 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(34468. .34747)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note-"IL-4 interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="IL-4 interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="L1"
35847 .35923
/rpt_family="MER21"
36163 .3628
37403 .37481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="MIR"
39322. 39395
/rpt_family="MER41"
41201. 41288
/rpt_family="MIR2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="Alu"
complement(34893. .
/rpt_family="Alu"
35107. .35585
/rpt_family="Alu"
19137. 19458
/rpt_family="Alu"
19830. 20187
/rpt_family="Alu"
20125. 20149
/note="(A)25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'rpt_family="MIR"
7646. .37777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'rpt_type=tandem
                                                                                                                                                                                                          'rpt_type=tandem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rpt_type=tandem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'note="(T)20"
                                  repeat_region
                                                                                                                                                     repeat_region
                                                                                          repeat_region
                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
```

•

```
Consensus quality: 64691 bases at least 040
Consensus quality: 72151 bases at least 030
Consensus quality: 7318 bases at least 030
Consensus quality: 7318 bases at least 030
Consensus quality: 7318 bases at least 030
Estimated insert size: 76669; sum-of-contigs estimation
Estimated insert size: 76669; sum-of-contigs estimation
Quality coverage: 7.05 in 020 bases; agarose-fp estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 19 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
* be preserved.
                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
Submitted (15-JUL-2000) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
-----Genome Center
Center: Joint Genome Institute
Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 78469)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                  37 cctogctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC074127 78469 bp DNA HTG 15-JUL-2000 Homo sapiens chromosome 5 clone CTD-2025J21, WORKING DRAFT SEQUENCE, 19 unordered pieces.
                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                   Length 50282;
                                                                                                                                                                                                                               Score 88.4; DB.85; Length :
Pred. No. 7.4e-14;
0; Mismatches 26; Indels
complement(44670. .50282)
/note="IL-13 interleukin-13"
                                                                                                         complement (46450. .46534)
/note="IL-3 exon"
complement (46616. .46756)
/rpt_family="MIR"
                                           complement(45620. .46000)
/note="99% identity"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center Project Name: 637386
Center clone name: CITB-H1_2025J21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing of Human Chromosome 5
Unpublished
                                                                                           /db_xref="dbSTS:G06679"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC074127.1 GI:9211237
HTG; HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 78469)
DOE Joint Genome Institute.
                                                                                                                                                                                                                          Query Match 53.3%;
Best Local Similarity 80.0%;
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48411 GGAGCTCATT 48402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157 ggagctcatt 166
                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human.
misc_feature
                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
AC074127
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
Consensus quality: 64691 bases at least Q40
Consensus quality: 72151 bases at least Q30
Consensus quality: 72151 bases at least Q30
Consensus quality: 73718 bases at least Q30
Consensus quality: 73718 bases at least Q30
Consensus quality: 73718 bases at least Q30
Estimated insert size: 137500; agarose-fp estimation
Estimated insert size: 137500; agarose-fp estimation
Quality coverage: 12.65 in Q20 bases; sum-of-contigs estimation
* NOTE: This is a "working draft" sequence. It currently
* consists of 19 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N. but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
* be preserved.
                                                                                                                                                                                                                                                            Submitted (15-JUL-2000) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA -----Genome Center Center: Joint Genome Institute Center Code: JGI
                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primâtes; Catarrhini; Hominidae; Homo.

1 (bases 1 to 78469)

DOE Joint Genome Institute.

Sequencing of Human Chromosome 5

Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        f unknown length
9 of 2328 bp in length
f unknown length
9 of 4201 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig of 1478 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of unknown length
contig of 1027 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 2864 bp in le
unknown length
funknown length
of 1743 bp in le
unknown length
of 1743 bp in le
unknown length
funknown length
funknown length
funknown length
funknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
of 3015 bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
of 3010 bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of unknown l
contig of 1288 b
gap of unknown l
contig of 1191 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown l
of 2034 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 3041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center Project Name: 637386
Center clone name: CITB-H1_2025J21
                                                                                                                                                                                                                                                                                                                                                                                             Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                              2 (bases 1 to 78469)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5284:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3993:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24669:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Summary Statistics
                                                                                                                                                                                                                                               Direct Submission
                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5285
8288
8389
10025
10025
111968
13366
13366
13366
13326
13366
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13326
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34440
34540
41654
41754
49551
                      ORGANISM
                                                                                                                  AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                        JOURNAL
                                                                                           REFERENCE
                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                         COMMENT
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40677 CCTCAATCCTCTCTGTTGGCACTGGGCCTTCATGGCGCTTTTGTTGACCACGGTCATTGC 40736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTG 15-JUL-2000 SEQUENCE, 19 unordered pieces. SEQUENCE, 19 unordered pieces. AC074127 AC074127 I GI:9211237 HTG: HTGS_PHASE1; HTGS_PRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 78469,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34539: gap of unknown length
41653: contig of 714 bp in length
49550: contig of 7797 bp in length
49550: gap of unknown length
49650: gap of unknown length
59671: contig of 10021 bp in length
59771: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1802 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53.3%; Score 88.4; DB 75; Length 80.0%; Pred. No. 6.9e-14; ive 0; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Jp ..
length
'n length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 78469: contig of 18698 bp in length
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="calTech human BAC library D" 18951 c 18948 g 19879 t 1802 other
                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                              in length
                                                                                                                                              in length
                                                                                                                                                                length,
                                                                                                                                                                                                                        ength
                                                                                                                                                                                                                                                                        ength
                                                                                                                                                                                                                                                                                                                      ength
                                                                                                                                                                                                                                                                                                                                                                                                                         ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                       ength
                                                                                                                                                                                                                                                                                                                                                                      ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ļ
                                                                                                                                                                                                    드
                                                                                                                                                                                                                                                    ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown l
of 3010 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown l
                                                                                                                       unknown
of 1191
                                                                                                                                                                                                                        unknown
of 1676 l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown of 2034 }
                                                                    unknown
of 1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2328
                                                                                                                                                                                            2864
                                                                                                                                                                                                                                                                                                                                                                                             of 2845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                               of 1743
                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                             of 1298
                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                              of 3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oę
                                                                                                                                                                                              οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606'
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="CTD-2025J21"
                                                                                                                                                                                                                                          contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                          contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig gap of contig c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig gap of contig
                                                                                                                     gap of
contig
                                                                                                                                                                     gap of
contig
                      gap of
contig
                                                                       gap of
contig
                                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19425:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27810:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 80.0
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGCTCATT 40806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggageteatt 166
                 1479
1579
2506
22706
33994
33994
3395
100025
110062
111968
113266
113266
113266
113266
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
11326
113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34440
34540
41654
41754
49551
49651
59672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ಹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC074127/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
```

ò

ò

```
mat_peptide
                                                                                                                            intron
                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                             intron
                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                     exon
                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 3520)
Buitkamp, J., Jann, O. and Fries, R.
The cattle interleukin-13 gene: genomic organization, chromosomal location, and evolution of the promoter
Immunogenetics 49 (10), 872-878 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (19-3AP) Buitkamp J., Tierzucht, TU-Muenchen, Alte
Akademie 12, 85350 Freising, GERMANY
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Cetartiodactyla; Ruminantia; Recora; Bovoidea; Bovidae;
Bovinae; Bos.
                                                                                                                                                                                                                                                                                       37 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 96
                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                             10-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="iS16b"
join(588. .789,1742. .1795,2038. .2142,2484. .2591)
/gene="ill3"
588. .2591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(658. .789,1742. .1795,2038. .2142,2484. .2591)
/gene="ill3"
                                                                                                                                                                               Length 78469;
                                                                                                                                                                                                          ;
                                                                                            /clone="CTD-2025J21"
/clone_lib="CalTech human BAC library D"
18951 c 18948 g 19879 t 1802 others
59771: gap of unknown length 78469: contig of 18698 bp in length.
                                                                                                                                                                           Score 88.4; DB 75; Length
Pred. No. 6.9e-14;
0; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               MAM
                        Location/Qualifiers
1. 78469
Corganisms"Homo sapiens"
/db_xref="taxon:9606"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus 1113 gene, exons 1-4. AJ132441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9913"
/chromosome="4"
/dev_stage="adult"
/map="4q23-31"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .3520
/organism="Bos taurus'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AJ132441.1 GI:5420144
ill3 gene; interleukin-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="ill3"
588. .789
/gene="ill3"
                                                                                                                                                                              53.3%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657. .717
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 3520)
                                                                                                                                                                            Query Match 53.3
Best Local Similarity 80.0
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'number-1
                                                                                                                                                                                                                                                                                                                                                               11111111
73561 GGAGCTCATT 73552
                                                                                                                                                                                                                                                                                                                                               157 ggagctcatt 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Buitkamp, J.
                                                                                                                          æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus
                                                                                                                         18889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
BTA132441 .
LOCUS
DEFINITION
                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                         Op
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                               ò
```

```
/protein_id="CAB46636.1"
/db_xref="G1:5420145"
/translation="MALLIFYPULICFGGLTSPSPVPSATALKELIEELVNITQNQK
VPLCNGSWVWSLNLTSSMYCAALDSLISISNCSVIQRTKKMLNALCPHKPSAKQVSSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ctcagcttaggccagcctacgacctgcctgctttccctcgctcctcctgcattggctct 60
                                                                   YNRDTKIEVAQFLKDLLRHSRIVFRNERFN"
join(718. .789,1742. .1795,2038. .2142,2484. .2588)
/gene="1113"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 3520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 78.4; DB 7;
Pred. No. 4.8e-11;
0; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                     873
                                                                                                         /product="interleukin-13"
790. 1741
/gene="ill3"
/product="interleukin-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search completed: May 13, 2001, 14:16:04 Job time: 18844 sec
                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                     857
                                                                                                                                                                                                                                         /number=2
2048. .2142
/gene="ill3"
                                                                                                                                                                   1742. .1795
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 47.2%;
Best Local Similarity 71.7%;
Matches 119; Conservative
                                                                                                                                                                                                             1796. .2047
/gene="ill3"
                                                                                                                                                                                                                                                                                                 2143. .2483
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                          2484. .2591
/gene="ill3
                                                                                                                                                                                                                                                                                                                                                                                     934 c
                                                                                                                                                                                                                                                                                                                             /number=3
                                                                                                                                                        /number=1
                                                                                                                                                                                                  /number=2
                                                                                                                                                                                                                                                                                     /number=3
                                                                                                                                                                                                                                                                                                                                                                         /number=4
                                                                                                                                                                                                                                                                                                                                                                                     856
```

Sequence encoding
Human low adenosin
Human low adenosin
Human adenosine re
Cytchine NC30. 0
Gly41-Cytchine cod
Asp41-Cytchine cod
Sequence encoding
Human low adenosin
Human low adenosin

Perfect score:

Sequence:

OM nucleic

Run on:

Scoring table:

Searched:

٠.

Database

Human low adenosin Human adenosine re Human low adenosin Human adenosine re

Canine mature inte Canine interleukin Canine mature inte

Human adenosine re Human adenosine re Canine interleukin Human interleukin Cellulose binding

S. coelicolor resw Dominant-negative Streptomyces albid Nucleotide sequenc

Enhanced green flu

Zea mays DNA fragm

Myceliophthora Myceliophthora M. thermophila Laccase gene.

```
Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Interleukin-13; IL-13; antibody; canine; inhibitor; immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling
                255556
255554
73521334
7352133
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
735210
                                                                                                                                                                                                                                                                                                     F21337
A35209
A35215
Z55552
                                                                                                                                                                                                                                                                                                                                                                           Z32227
T74283
T74282
T10922
T72106
T63318
Z24236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        248297
V48405
Z06825
A14651
                                                                                                                                                                                                                                                                                      F21331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1i; Page 228; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z55553 standard; cDNA; 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                 772
2712
77536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris.
WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                                335.22
335.22
35.22
35.22
34.34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.6
33.2
33.2
                                                                                                                                                                                                                                                                                        71
71
71
71
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
Canine interleukin
Canine interleukin
Canine interleukin
Canine mature inte
Canine mature inte
Canine interleukin
Canine interleukin
Canine interleukin
Canine interleukin
                                                                                                                    May 13, 2001, 14:28:50 ; Search time 472.02 Seconds (without alignments) 336.402 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N_Geneseq_0401:*

| Cgn1_8/gcgdata/geneseq/geneseqn/Na1980.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1981.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1981.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1982.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1984.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1985.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1986.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1986.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1992.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1993.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1993.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1993.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1993.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1999.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseq/geneseqn/Na1999.DAT:*
| Cgn1_8/gcgdata/geneseq/geneseqn/Na1999.DAT:*
                                                                                                                                                                                        US-09-451-527-89
272
1 tggccttgcctccccgagcc.....cagtgaacgcagccgagaca
           4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                      678276 segs, 291890651 residues
            GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                    using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    255553
255557
255558
255558
255555
255550
255560
255563
255563
255563
255563
                                                                                                                                                                                                                                                                IDENTITY_NUC
Gapop 10:0 , Gapext 1:0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΙD
                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                    · nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1302
1302
333
333
390
390
1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.00
100.0
100.0
94.1
94.1
94.1
94.1
94.1
```

Score

Result Š. 272 272 272 272 272 272 272 276 256 256 256 256 256

O O O O

4 6 7 7 110 110

U

Wonderling RS;

Yang S, Dreitz MJ,

Sim G,

~

```
Sequences 25552-255560 and 255561-25556 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated colony-stimulating factor (GMCSF), and incleotides which encode these immunoregulatory proteins. The prophlactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including a largies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gctggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtgggagcgt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 cagogocatocaaaggacocagaggatgotgaaagcactgtgototoaaaagcocgoggo 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 tggccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgagga 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 272 BP; 64 A; 91 C; 69 G; 48 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.0%; Score 272; DB 21; Best Local Similarity 100.0%; Pred. No. 4.8e-67; Matches 272; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255557 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
255557
        $$$$$$$$$$$$$$$$$$$$$$$$$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

```
and 78 respectively. The invention relates to canine
and 78 respectively. The invention relates to canine
and 78 respectively. The invention relates to canine
TL-4, canine or feline Fit-7 aligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allerates, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
se sources of inhibitory therapeutics (e.g., antisense oligonucleotides)
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         225 cagegecatecaaaggaeecagaggatgetgaaageaetgtgeteteaaaageeegegge 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 tygccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgagga 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                      Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 cagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 100.0%; Score 272; DB 21; Length 393; Similarity 100.0%; Pred. No. 5.3e-67; 2; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                         25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285 agggcagatttccagtgaacgcagccgagaca 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                              Claim 11; Page 232-233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z55558 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                        WPI; 2000-072623/06.
                                                                           P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272;
                                                                                                                                                                                                                           Sednences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25558,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
```

ö

us-09-451-527-89.rng

Sim G,

```
Sequences 25552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fl1-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, fumours, inflammamation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 272; DB 21; Length 1302; 100.0%; Pred. No. 7.3e-67; ive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                     /*tag= a
/product= "Canine IL-13 clone
                                                                                                                                            Canine interleukin:13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1i; Page 229-230; 264pp; English.
                                                                                                                                                                                                                                                                                                        Location/Qualifiers
       BP.
    Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.
Best Local Similarity 100.
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                  52..447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                        W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                            14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                        Key
    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences 25552-255560 and 255561-25556 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline
CL-4, canine or feline Fit-3 ligand, canine IL-13, feline
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
munoregulatory proteins. The prophlactic regulation of an immune
calony-stimulating factor (GMCSF), and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophlactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
mucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
andulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gotygicaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtggagcgt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 tygecttygcetcecegagecetytygaetecetececaaceeteaaggageteattyaaga 60
                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 272; DB 21;
100.0%; Pred. No. 5.3e-67;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                              Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1i; Page 233; 264pp; English.
                                                                                                                                         99WO-US11942.
                                                                                                                                                                                    98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.0
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                           2000-072623/06
                                                                                                                                                                                                                               (HESK-) HESKA CORP.
Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                 P-PSDB; Y58221.
                                             WO9961618-A2
                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                    29-MAY-1998;
                                                                                            02-DEC-1999
```

Query Match

589 121 229

61

ద ò g ò qq à 셤 ò

ö

Gaps

ö

61

셤 ò qq

109

RESULT Z55555

241

ö

G; 337 T; 0 other;

C; 318

Sequence 1302 BP; 307 A; 340

and in drug targetting.

```
SXS
                                                                                                                 ŏ
                                                                                                                                       g
                                                                                                                                                                 οy
                                                                                                                                                                                         g
                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequences encoding canine interleuring (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine or feline fit-3 ligand, canine IL-13, feline
Interferon-alpha (FN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nuclectides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The prophylactic regulation of an immune
colony-stimulation for prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
         276 cagogocatecaaaggacecagaggatgetgaaagcaetgtgeteteaaaageeegegge 335
                                                                                                                                                                                                                                                                                                              response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                             cagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                  Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= a
/product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                              Location/Qualifiers
complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 231-232; 264pp; English.
                                                                                                                                                                                                      BP.
                                                                                                                                                                                                      Z55556 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic acids encoding useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-DEC-1999
                                                                                                                                                                                                                               255556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sim G,
                                                             181
                               g
                                                                                                                                                                                                      ò
                                                                                  qq
                                                                                                             ò
                                                                                                                                     g
```

```
1028
                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Fit-13 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granuloxyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated
                                                                                                                                                                                       gotigateaacateacecagaateaggeatecetetgeaacggeageatggtgggagegt 120
                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                         968
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                             1147 GCTGGTCAACATCACCCAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGT
                                                                                                                                                                                                                                                                                                                                                                            cagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                     1027 CAGGGCCATCCAAAGGACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGGC
                                                  ;
    Length 1302;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine mature interleukin-13 (IL-13) clone 80 cDNA.
100.0%; Score 272; DB 21;
100.0%; Pred. No. 7.3e-67;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            967 AGGCCAGATTTCCAGTGAACGCAGCCGAGACA 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1i; Page 233-234; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255559 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000-072623/06.
                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; Y58222.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                             Matches 272;
  Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
```

```
ö
nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cagaatcaggcatccttctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 136
                                                                                                                                                                                                                                                                                                                                                                                                                      atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 196
                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                     17 ageoetgtgaetecetececaaceteaaggageteattgaggagetggteaacateace 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                 1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                    94.1%; Score 256; DB 21; Length 333; 100.0%; Pred. No. 1.5e-62; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                     64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wonderling
                                                                                                                                                                                                                     Sequence 333 BP; 89 A; 97 C; 83 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z55560 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 gaacgcagccgagaca 256
                                                                                                                                                                                     and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gaacgcagccgagaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; Y58222.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ġ,
                                                                                                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
255560/c
ID 2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  399999999999888
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
```

```
Sequences 25552-25560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine of feline Fil-3 ligand, canine or feline Fil-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-13, feline colory stimulating factor (GMCSF), and nucleotides which encode these interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  197 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94.1%; Score 256; DB 21;
100.0%; Pred. No. 1.5e-62;
11ve 0; Mismatches 0;
                 Claim 11; Page 235; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z55563 standard; cDNA; 390 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US11942,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257 gaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACGCAGCCGAGACA 78
                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

ö

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune
  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                             and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine CD40, canine or feline F14-3 ligand, canine IL-3, canine IL-13, feline coll-14, canine or feline F14-3 ligand, canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <del>.</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 gctggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtggagcgt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 cagegecatecaaaggacecagaggatgetgaaageactgtgeteteaaaageeegegge 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45 tggccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgagga 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 tggccttgcctccccgagccctgtgactccctcccaaccctcaaggagctcattgagga 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement.
                                                                                                                   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94.1%; Score 256; DB 21; Length 390; 98.9%; Pred. No. 1.5e-62; 1ve 0; Mismatches 0; Indels
                                                                                                                                                                                     Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                    Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         285 agg---gatttccagtgaacgcagccgagaca 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                           Claim 11; Page 238-239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yang S, Dreitz MJ,
98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 98.9°
Matches 269; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting
                                                                          WPI: 2000-072623/06.
                           (HESK-) HESKA CORP.
                                                                                            P-PSDB; Y58223
29-MAY-1998;
                                                    Sim G,
 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences 25552-25556 and 255561-25556 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine IL-4, canine or feline Fil-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon alpha (IFN alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gctggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtggagcgf 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      286 GCTGGTCAACATCACCCCAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGTGGAGCGT
immunorequlation; tumour; cancer; autoimmune disease; vaccine; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caacctgaccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94.1%; Score 256; DB 21;
llarity 98.9%; Pred. No. 1.5e-62;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGG---GATTTCCAGTGAACGCAGCCGAGACA 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 11; Page 239; 264pp; English.
                                                                                                                                                                                                                                                 99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                            98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 269; Conserv
                                                                                                                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP
                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; Y58223
                                                                                                                                                                                                                                                                                                            29-MAY-1998;
                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                   02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
```

ij

```
61
                                                                                                                                                                                                                                                                                                     Z55562
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                      XX AC
                              q
                                                                                              qq
                                                                                                                                    δ
                                                                                                                                                                 g
                                                                                                                                                                                                   δ
                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-25560 and 255561-25566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The prophilators may be used as
nucleic acids, specific antibodies and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
can also be used for the recombinant production of a protein, while
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
andulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                  /*tag= a
/product= "Canine IL-13 clone 78"
                                                                                                                                                Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1i; Page 235-236; 264pp; English.
                                                                                                                                                                                                                                                                   Location/Qualifiers
                                              255561 standard; cDNA; 1269 BP
                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0087306
                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                    ..449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HESK-) HESKA CORP.
                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; Y58223
                                                                                                                                                                                                                                                                                                                                                    WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                               z55561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sim G,
             RESULT 10
                             255561
```

```
Sequences 25552-25560 and 25561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Filt-3 ligand, canine or feline CD040, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and
                              161 gctggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgtggagcgt 220
                                                                    180
                                                                                                     280
                                                                                                                                         240
                                                                                                                                                                         281 cagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                  gctggtcaacatcacccagaatcaggcatccctctgcaacggcatggtgtggagcgt
                                                                                                                                         cagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc
                                                                                                                                                                                                                                                                                                                                                                                                                                          Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                                                                                                                          Claim 1i; Page 237-238; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
complement (821..1213)
                                                                                                                                                                                                                                                                                                                     .2/c
255562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072623/06.
P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                     255562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G,
                                                                                                                                       181
```

ij

3;

Query Match
94.1%; Score 256; DB 21; Length 1269;
Best Local Similarity 98.9%; Pred. No. 2.1e-62;
Matches 269; Conservative 0; Mismatches 0; Indels 3;

```
1;
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                        1169 TGGCCTTGCCTCCCCGAGCCCTGTGACTCCCTCCCAACCCTCAAGGAGCTCATTGAGGA 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1049 CAACCTGACCGCCGCCATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTG 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 255552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline FIL-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
                                                                                                                                                                                                                                                                                                                                                                                 tggccttgcctccccgagccctgtgactcctccccaaccctcaaggagctcattgagga 60
                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SS.
                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                      Score 256; DB 21; Length 1269;
Pred. No. 2.1e-62;
0; Mismatches 0; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune
                                                                                                                                                           Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine mature interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 agggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           929 AGG---GATTTCCAGTGAACGCAGCCGAGACA 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 239-240; 264pp; English.
                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 98.9%;
Matches 269; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255565 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                 and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06.
P-PSDB; Y58224.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
255565
XX
AC Z555655
XX
AX
DY 14-MAR-
XX
DY 14-MAR-
XX
DX Canine
XX
CANINE
CANIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sim G,
                                                                                                                                                                                                                                                                                                                                                                                    --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
   8 \times 8 \times 8 \times 8
                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
ä
          colony-stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 136
                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                            atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
..
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canine mature interleukin-13 (IL-13) clone 78 cDNA.complement.
                                                                                                                                                                                                                                                                       88.2%; Score 240; DB 21; Length 330; 98.8%; Pred. No. 4.3e-58;
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                , <u>(</u>
                                                                                                                                                                                                                            Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z55566 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                   Local Similarity 98.8
nes 253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      238 gaacgcagccgagaca 253
                                                                                                                                                                                                  targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaacgcagccgagaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-072623/06.
P-PSDB; Y58224.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                and in drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999.
                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255566;
                                                                                                                                                                                                                                                                                      Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z25566/c
δ
                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
```

σ

99WO-US11942

```
28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F2133
  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences 25552-25560 and 255561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine or feline CDL9 (CD40 ligand), canine IL-13, feline CDL94 (CD40 ligand), canine IL-13, feline colony-stimulating factor (GMCSF), and nucleotides which encode these colony-stimulating factor (GMCSF), and nucleotides which encode these inmunoregulatory proteins. The proteins which encode these nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 j;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagaatcaggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgccggc 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 agccctgtgactcccccaaccctcaaggagctcattgaggagctggtcaacatcacc 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
              Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 ATGTACTGCGCAGCTCTAGAATCTCTGATCATCTCTCGACTGCACGCGCCATCCAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         270 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGTCAACCTGACCGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3;
                                                                                                                                                                                                                                                                                                                                                                                                                    88.2%; Score 240; DB 21; Length 330; 98.8%; Pred. No. 4.3e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                                                                                                                                                                                                                                                                            Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canine interleukin-13 (IL-13) cDNA probe.
                                                    Claim 11; Page 241; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z55554 standard; cDNA; 278 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 253; Conservative
                                                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACGCAGCCGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
the response from a co-administered antiqen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase
                                                                                                                                                                                                                                                                                                                                                                                                               Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-14, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids; specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human low adenosine antisense oligonucleotide related sequence #2901
                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86.0%; Score 234; DB 21;
100.0%; Pred. No. 1.9e-56;
ive 0; Mismatches 0;
                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                      Claim li; Page 229; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F21334 standard; DNA; 1270 BP
                                                                                                                              Yang S, Dreitz MJ,
98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 100.
Matches 234; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and in drug targetting
                                                                                                                                                                                          WPI; 2000-072623/06.
                                                               (HESK-) HESKA CORP.
29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F21334;
                                                                                                                              Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
```

0

```
immunosuppressive, antiasthmatic; analgesic; hypotensive; cytostatic;
respiratory obstruction; pulmonary obstruction; impeded respiration;
surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
pulmonary hypertension; emphysema; pulmonary transplantation rejection;
chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
surfactant depletion; respiratory; bronchodilator; antiinflammatory;
                                                 cancer; ss.
```

Homo sapiens

WO200062736-A2.

26-OCT-2000

24-MAR-2000; 2000WO-US08020

99US-0127958 06-APR-1999;

(UYEC-) UNIV EAST CAROLINA (NYCE/) NYCE J W.

Nyce JW;

WPI; 2000-679539/66.

Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -

Disclosure; Page 1336; 1592pp; English.

The antitional series of the control oligonucleotides and compositions (1) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (1) can have respiratory, bronchodilator, antilflammatory, analogsic, immunosuppressive, antiathmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (1) can be used to down-regulate the pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragments present invention describes low adenosine (A) content antisense and antisense oligonucleotides used in the exemplification of the present invention. The

Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;

1; 64.9%; Score 176.4; DB 21; Length 1270; 80.3%; Pred. No. 3.5e-40; iive 0; Mismatches 51; Indels 3; Local Similarity 80.3 tes 220; Conservative Query Match Best Loca Matches

2 ggccttgcctccccgagccctgtgactccctccaaccctcaaggagctcattgaggag 61 g ò

```
ctggtcaacatcacccagaatc---aggcatccttgcaacggcagcatggtgtggagc 118
                                                                                                                                      238
                                                                                                                                                                      tgcagtgccatcgagaagacccagaggatgctgagcggattctgcccgcacaaggtctca 329
                                                                                    210 atcaacctgacagctggcatgtactgtgcagccctggaatccctgatcaacgtgtcaggc
                                 150 ctggtcaacatcacccagaaccagaaggctccgctctgcaatggcagcatggtatggagc
                                                                 119 gicaaccigaccgccggcaigtacigcgcagcictagaaictcigaicaaigiciccgac
                                                                                                                                      tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                                                                                                                                                                       gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                           179
                                                                                                                                                                    270
                                                                                                                                                                                                     239
62
                                                                                                                                                                                                                                       330
à
                               QQ
                                                               ò
                                                                                               g
                                                                                                                                    ŏ
                                                                                                                                                                  g
                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                     q
```

Search completed: May 13, 2001, 14:28:53 Job time: 18248 sec

```
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
TELECOMUNICATION INFORMATION:
TELEPHONE: 415-496-1200
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: CDNA
                                                                                                                                                 (without alignments)
210.123 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                App1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                           272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, A
Sequence 3, A
Sequence 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 24
Sequence 4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1
Sequence 20
                                                                                                                                                                                                           US-09-451-527-89
272
1 tggccttgcctccccgagcc.....cagtgaacgcagccgagaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1
Sequence 2
Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                           May 13, 2001, 14:20:45; Search time 226.02 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                           605242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgnl_7/ptodata/1/ina/SA_COMB.seq:*
/cgnl_7/ptodata/1/ina/SB_COMB.seq:*
/cgnl_7/ptodata/1/ina/6A_COMB.seq:*
/cgnl_7/ptodata/1/ina/6B_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seq:*
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-15
US-08-371-121-15
US-08-371-121-124
US-08-594-469-4
US-08-906-957-4
US-08-906-957-1
US-08-371-121-2
US-08-371-121-2
US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-025-691-4
US-09-094-359-3
US-09-094-359-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US93-07645-3
US-08-814-052-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-814-052-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-939-218A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-940-661A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US95-06815-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                               302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                 - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                   length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1212
1212
1212
1212
2249
2300
2300
33187
33192
3192
3192
3192
3192
2712
2712
2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60.
47.
47.
47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176.4
176.4
176.4
174.8
165.8
165.2
165.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163.6
1128
1128
1128
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135.2
135
                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              164
164
                                                                                 OM nucleic
                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
                                                                                                                                                                                                                 Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š.
```

Sequence 11, Appl Sequence 40, Appl Sequence 40, Appl Sequence 11, Appl Sequence 2, Appl Sequence 27, Appl Sequence 27, Appl Sequence 5, Appl Sequence 1, Appl Sequence 1, Appl Sequence 1, Appl Sequence 3, Appl Sequence 3, Appl Sequence 3, Appli Sequence 3, Appli Sequence 7, Appli Sequence 7, Appli Sequence 7, Appli Sequence 7, Appli Sequence 7, Appli		
720 4 US-09-172-063-11 720 4 US-09-172-063-13 762 1 US-08-522-390-40 762 4 US-08-717-294-40 768 4 US-09-043-139-11 850 4 US-09-062-102-2 972 4 US-09-172-063-29 972 4 US-09-172-063-29 929 2 US-08-818-253-5 929 2 US-08-818-253-5 929 4 US-08-818-253-3 929 4 US-08-818-253-3 929 4 US-08-818-253-3 929 2 US-08-818-253-3 929 4 US-08-818-253-3 939 4 US-08-818-253-3 959 4 US-08-818-253-3 959 4 US-08-818-253-3 959 4 US-08-818-253-3 971 4 US-08-818-253-3	ALIGNMENTS	lication US/08012543 072 Culpepper, Janice McKenzie, Andrew Maren Dang, Warren Ge Waal Marfyt, Rene Heath, Andrew Aversa, Gregorio Britere, Francine Banchereau, Jacques Ge Vries, Jan Curawski, Geard Ge Vries, Jan Curawski, Geard Ge Vries, Jan Curawski, Geard Curawski, Geard Curawski, Geard Curakski, San Curawski, Geard Curakski, Geard Curakski, Geard Curicon: Britere, Francine Banchereau, Jacques Conpatible Curation and Avenue Olifornia USA DABLE FORM: E: Floppy disk DABLE FORM: E: Floppy disk Compatible SYSTEM: PC-DOS/MS-DOS PATENTIN Release #1.0, Version #1.25 TION: 435 ATION: 435 ATION DATA: N NUMBER: US/08/012,543 ATION: 435 ATION DATA: N NUMBER: US O7/933,416 E: 21-AUG-1992 NT INFORMATION: NG EGWin P.
		RMADON NAME OF THE PROPOSE OF THE PR
208 330 330 330 330 330 330 330 330 330 3		RESULT 1 Sequence 1, Applicati Patent No. 5596072 GENERAL INFORMATION: CAPPLICANT: Dang, APPLICANT: Dang, APPLICANT: Heath, APPLICANT: Heath, APPLICANT: Heath, APPLICANT: Heath, APPLICANT: Heath, APPLICANT: Benche APPLICANT: USA ZIP: COUNTY: USA ZIP: COMPUTER: FILO COMPUTER READABLE MEDIUM TYPE: FI COMPUTER: Daten COMPUTER: Daten COMPUTER: Paten CURRENT APPLICATION APPLICATION NUMB FILING DATE: 01 CLASSIFICATION APPLICATION NUMB FILING DATE: 21 ATTORNEY/AGET INF NAME: CALIGGT
		R D C C C C C C C C C C C C C C C C C C

us-09-451-527-89.rni

```
STRANDEDNESS
                                                                                                                                                                                                                                  PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Sin
Matches 220;
                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                          119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                        RESULT
                                        ò
                                                               QQ
                                                                                             ò
                                                                                                                      qq
                                                                                                                                                  à
                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                            ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ij
                                                                                                                                                                                       90 GGCTTTGCCTCCCCAGGCCCTGTGCCTCCTACAGCCCTCAGGGAGCTCATTGAGGAG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 cl∍jtcaacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagc 118
                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 ggccttgcctccccgagccctgtgactccctcccaacctcaaggagctcattgaggag
                                                                                                                                    2 ggccttgcctccccgagccctgtgactccctcccaaccctcaaggagctcattgaggag
                                                                                                                                                                                                                                                                                                   179 tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg
                                                                                Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1290;
                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                           51;
                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 176.4; DB 5;
Pred. No. 8.9e-45;
0; Mismatches 51;
                                                                               Score 176.4; DB 1
Pred. No. 8.9e-45;
0; Mismatches 51
                                                                                                                                                                                                                                                                                                                                                        239 gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                        330 GCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACA 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AGG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.9%;
80.3%;
                                                                               64.9%;
80.3%;
                                                                             Ouery Match
Best Local Similarity 80.3
Matches 220; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 220; Conservative
            CDS
45..443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TOPOLOGY: linear
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
PCT-US93-07645A-1
            ; NAME/KEY:
; LOCATION:
US-08-012-543-1
FEATURE
                                                                                                                                                            a
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                          å
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
gtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgac 178
                                                                                                                                                        90 GCCTTTGCCTCCCCAGGCCCTGTGCCTCCTCTACAGCCCTCAGGAGCTCATTGAGGAG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 ctggtcaacatcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagc 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270 TGCAGTGCCATCGAGAAGACCCAGAGGATGCTGAGGGGATTCTGCCGCACAAGGTCTCA 329
                       150 CTGGTCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGC 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgac 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179 tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                            210 ATCAACCTGACAGCTGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 ggccttgcctcccgagccctgtgactccctcccaaccctcaaggagctcattgaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 ATCAACCTGACAGCTGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTCTAGGC
64.9%; Score 176.4; DB 5; Length 1290; 80.3%; Pred. No. 8.9e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8.9e-45;
ches 51;
                                                                                                                                                                                                                                              gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACA 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPPRATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
RPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Hun
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA: APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
```

ij

```
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, MOUTED
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
CORRESPONDENCE ADDRESS:
                                                                                                                                                                          179 tgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcg 238
                                                                                                                                                                                                                                                                                         182 TGCAGTGCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCA 341
SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                        239 gcagggcagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                               342 GCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEE: FOLEY & LARDNER: 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 08-JAN-1992
PROOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BETNARD D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FF92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Sequence 17, Application US/08371121
// Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA
ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPALIBLE
OPERATING SYSTEM: PC-DOS/MS-DX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (202) 672-53
TELEFAX: (202) 672-5399
TELEX: 904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                              ò
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                        APPLICANT: CARUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: EFRRARA, Pascual
APPLICANT: EFLAMORY, Jean-Claude
APPLICANT: MINTY, Adrian
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: KAGHAD, Mourad
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: LARINSformed cells and microorganisms.

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPOUTE: 2007 3129
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 174.8; DB 1;
Pred. No. 2.7e-44;
0; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                        3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30 NOV-1992
PRIOR APPLICATION DATA:
APPLICATION DATA:
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
FILING DATE: 29-MAR-1991
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BETNHARD D.
REGISTRATION NUMBER: 18/91
REGISTRATION NUMBER: 18/91
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16/781/383
TELECOMMUNICATION:
FULLIOR DATE: 16/91/383
                      RESULT 4
US-08-371-121-15
: Sequence 15, Application US/08371121
: Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEX: 904136
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERIESTICS:
LENGTH: 1297 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64.38;
79.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 64.3
Best Local Similarity 79.9
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15..452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
LOCATION:
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE
```

```
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                         ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Additan
APPLICANT: MINTY, Additan
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: Activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: Lansformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                       136 ACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCC 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc 187
                                                                                                                                                                                                                                                                                                                                  71 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 127
                                                                                                                                                                                                                                                           11 teceegageeetgtgaeteeeteeecaaceeteaaggageteattgaggagetggteaae 70
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcag
                                                                                                                                                                                                                         ж
;;
                                                                                                                                                                                Length 384;
                                                                                                                                                                                  Score luc...,
Pred. No. 1e-41;
...t-hes 52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                61.0%; Score 165.8; DB 1; 79.2%; Pred. No. 1e-41;
                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UMBER: PCT/FR92/00280
27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR PAPLICATION DATA:
- APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           248 atttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256 TITTCCAGCTTGCATGTCCGAGACA 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 24, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                  ; TOPOLOGY: linear; MOLECULE TYPE: DNA (genomic) US-08-371-121-17
             SEQUENCE CHARACTERISTICS:
LENGTH: 384 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                   Best Local Similarity 79.2
Matches 210; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CAPUT, Daniel
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                           128
                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marchod for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .,
.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1; Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 60.7%; Score 165.2; DB 1
Best Local Similarity 80.2%; Pred. No. 1.5e-41;
Matches 207; Conservative 0; Mismatches 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                               16781/383
           FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 1678.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEX: 904136
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 4, Application US/08594469; Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: DNA (genomic)
US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255 gtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242 GCTTGCATGTCCGAGACA 259
                                                                                                                                                                                                                                                                                                                                    LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                     single
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: Virginia COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
```

```
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALLOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175 creacaccrecareracrerecerecerecarecrearecreareracereragecrecaer 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55 GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 gcctcccgagccctgtgactcctccccaacctcaaggagctcattgaggagctggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 164; DB 2; Length 42
Pred. No. 3.6e-41;
0; Mismatches 55; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            295 CAGITITCCAGCITGCATGICCGAGACA 322
                                                                                                                                            APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOU
TELECOMUNICATION INFORMATION:
TELEFPHONE: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
          об-Aug-1997
                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-594-469-1; Sequence 1, Application US/08594469
; Patent No. 5700665; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: DNA (genomic) US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60.3%;
78.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οσCON & Thomas CITY: 625 Slaters Lane CITY: Alexandria STATE: Virei-
                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 425 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 60.3
Best Local Similarity 78.4
Matches 210; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                  FILING DATE:
                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALLONAND, Paul
APPLICANT: SALLONAND, Method for the extraction of
TITLE OF INVENTION: Periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES:
ADDRESSEE: Bacon & Thomas
STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55 GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68 aacatcacccagaatc...aggcatccttgcaacggcagcatggtgtgggagcgtcaac 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gocateceaaaggacecagaggatgetgaaagcaetgtgeteteaaaageeeggggaaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          э;
е
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.3%; Score 164; DB 1; Length 425; 78.4%; Pred. No. 3.6e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 3.6e
0; Mismatches
                                                                                                                                                                 NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/594,469
                                     FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INCORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08906957 Patent No. 5856142 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                             TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                LENGTH: 425 base pairs
TYPE: nucleic acid
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 60.3
Best Local Similarity 78.4
Matches 210; Conservative
                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              295
```

g ŏ ò a g ð

ŏ

```
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          632 CAGITITCCAGCITGCATGICCGAGACA 659
                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,95;
FILING DATE: 06-AUG-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
                                                                                                                                                                      FILING DATE:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                      26,382
                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: DNA (genomic) US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60.3%;
ilarity 78.4%;
Conservative
                                                                                                                                                                                                                                                  NAME: FICHTER, Richard E REGISTRATION NUMBER: 26,3 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                    CLENGTH: 4410 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 210; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION: APPLICANT: CAPUT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 method for the extraction of periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68 aacatcacccagaatc---aggcatccttctgcaacggcagcatggtgtggagcgtcaac 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      572 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 60.3%; Score 164; DB 1; Length 4410; Best Local Similarity 78.4%; Pred. No. 7.8e-41; Matches 210; Conservative 0; Mismatches 55; Indels
SUFFWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/594,469 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                     CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
PULICATION DATA:
APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: 26,382
REFERENCE/DOCKET NUMBER: 75,000
TELEPHONE: (703) 683-0500
TELEPHONE: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   632 CAGTTTTCCAGCTTGCATGTCCGAGACA 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 cagatttccagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08906957
Petent No. 5856142
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οσCON & Thomas CITY: 625 Slaters Lane STATE: Virzi
                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
```

```
Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                 125 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 184
                                                                                                                                                                                                                                                   Gaps
                                                                          8 gootcoccgagcoctgtgactocctcccaaccctcaaggagctcattgaggagctggtc
                                                                                                                                                                                                                                                                                                         185 gecatecaaaagaacecagaagatgetgaaageactgtgeteteaaaageeegeggeaggg
                                       ٠.
ش
 Length 4410;
Score 164; DB 2;
Pred. No. 7.8e-41;
                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: KAGHAD, MOLEAR
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN. Maril...
```

ä

```
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 128; DB 1; Length 447;
Pred. No. 3.3e-30;
0; Mismatches 60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgc 237
                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                 : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FULFRESZ UDZER PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/38:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/0028
                       GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47.18;
73.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (202) 672-5300
                                                             MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 47.1
Best Local Similarity 73.2
Matches 164; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEX: 904136
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                       ZIP: 20007-5109
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE:
US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 agaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 goootgtgactcoctcoccaaccetcaaggagetcattgaggagetggtcaacatcacec 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 336;
                                                                                                                                        PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 4.4e-41;
0; Mismatches 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.1%; Score 163.6;
ilarity 79.8%; Pred. No. 4.46
Conservative 0; Mismatches
                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION UNDER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-DAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
APPLICATION NUMBER: RR 91 03904
FRIGHTSPRATION NUMBER: 28,6655
REGISTRATION NUMBER: 28,6655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16781/383
                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-26
; Sequence 26, Application US/08371121
Patent No. 5652123
; GENERAL INFORMATION:
                               ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255 gtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242 GCTTGCATGTCCGAGACA 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 336 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: CAPUT, Daniel
Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                               OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                      FILING DATE
                                                                                                                                        SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
```

Best Loca Matches

q ò g QQ

ò

ò

ö

g

```
259 GGCGGGTTCTGTGTAGCCCTGGATTCCCTGACCAACATCTCCAATTGCAATGCCATCTAC 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74 accoagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259 GGGGGGTTCTGTGTAGCCCTGGATTCCCTGACCAACATCTCCAATTGCAATGCCATCTAC 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14 ccgagccctgtgactccctcaaccctcaaggagctcattgaggagctggtcaacatc 73
  Length 1212;
                                                            194 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgc 237
                                                                                                 319 AGGACCCAGAGGATATTGCATGCCTCTGTAACCGCAAGGCCCC 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgc 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               319 AGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCC 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , DB 5;
4.5e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Human Interleukin-13
MUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                            PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                             COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 07/933416
                                                                                                                                                                                                  Sequence 3, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3, Application PC/TUS9307645
GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base palfs
                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 73.2
Matches 164; Conservative
                                                                                                                                                                                                                                                            TITLE OF INVENTION: HUR
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 29-JAN-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: U
FILING DATE: 21-AUG-1
                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                               RESULT 14
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US93-07645-3
                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                            δ
                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139 CCAAGATCTGTGTCTCTCCCTCTGACCTTAAGGAGCTTATTGAGGAGCTGAGCAACATC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74 acccagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199 ACACAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGACCTGGCCGCT 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134 ggoatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14 ccgagccctgtgactccctcaaccctcaaggagctcattgaggagctggtcaacatc 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 128; DB 1; Length 1212;
Pred. No. 4.5e-30;
0; Mismatches 60; Indels
298 AGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCC 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                    Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
ENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                            DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
                                                                                                                                                                                                                                       de Waal Malefyt, Rene
Heath, Andrew
                                                                                                                   Sequence 3, Application US/08012543
Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                               901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                           Culpepper, Janice
McKenzie, Andrew
Dang, Warren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1121 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                 Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 73.2%;
Matches 164; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70..465
                                                                                                                                                                                                                                                                                                                                                                                    PITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94304-1104
                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                            RESULT 13
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                               APPLICANT
                                                                                                                                                                                                                                                                                                      APPLICANT
                                                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE:
```

ò Q ò g

ö

Gaps

```
SOFTWARE: Microsoft Word 5.19
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 Dase pairs
TYPE: nucleic acid
TYPE: nucleic acid
TYPE: 1000LOGY: linear
```

ö 134 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 193 0; Gaps Length 1212; Score 128; DB 5; Pred. No. 4.5e-30; 0; Mismatches 60 Ouery Match
Best Local Similarity 73.2%;
Matches 164; Conservative g ò g ο̈́ a

Search completed: May 13, 2001, 14:20:49 Job time: 17800 sec

em\_esthum12:\* em\_esthum13:\* em\_esthum10:\* em\_esthum11:\*

em\_esthum14:\* em\_esthum16:\*

em\_esthum15 em\_esthum17 em\_esthum24:\*
em\_esthum25:\*
em\_esthum26:\*

em\_esthum27:\* em\_esthum28: em\_estin1:\*

em\_estin4:\* em\_estin5:\*

em\_estom2: em\_estov1:' em\_estom1:

em\_estpl2:\* em\_estpl3:\* em\_estpl4:\* em\_estpl5:\* em\_estpl6:\* em\_estpl7:\* em\_estpl8:\*

em\_estpl1:

em\_estin2:\* em\_estin3:\*

em\_esthum22:\* em\_esthum23:\*

em\_esthum20:\* em\_esthum21:\*

em\_esthum18 em\_esthum19

```
May 13, 2001, 11:39:33 ; Search time 5997.24 Seconds (without alignments) 396.219 Million cell updates/sec
                                                                                                                                       US-09-451-527-89
272
1 tggccttgcctccccgagcc......cagtgaacgcagccgagaca 272
                                                                                                                                                                                                                                                                        19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                          9623517 seqs, 4368049070 residues
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                 IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est40:*
em_estba:*
em_estfun:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_esthum2:*
em_esthum3:*
em_esthum4:*
em_esthum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_esthum6:*
em_esthum7:*
em_esthum8:*
em_esthum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est10:*
gb_est11:*
gb_est12:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est37:*
gb_est38:*
gb_est39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est13:*
gb_est14:*
gb_est15:*
gb_est16:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est21:*
gb_est22:*
gb_est23:*
gb_est24:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est33:*
gb_est34:*
gb_est35:*
gb_est35:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est17:
gb_est18:
gb_est19:
gb_est20:
                                                                                                                                                                                                                                                                                                                                                                                                                                 9b_est2:

9b_est4::

9b_est6::

9b_est6::

9b_est6::

9b_est6::

9b_est8::
                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                     EST:*
                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                          Searched:
                                                                                  Run on:
```

em\_estp110:

em\_estp19

em\_estro3:\* em\_estro4:\* em\_estro5:\* em\_estro6:\*

em\_estro2

em\_estrols: em\_estrols: em\_estrols: em\_estrols: em\_estrols: em\_estrols: em\_estrols: gb\_ests: gb\_est28: gb\_est28: gb\_est28: gb\_est28: gb\_est28: gb\_est38: gb\_est38: gb\_est38: gb\_est48: gb\_est41: gb\_est41: gb\_est44: gb\_est44:

994:...995:...995:...995:...995:...9995:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999:...9999

em\_estro10:\* em\_estroll:\* em\_estrol2:\* em\_estro14:\*

em\_estro9

em\_estro13:

em\_estro7:\* em\_estro8:\*

9b_est48 9b_est50 9b_est51 9b_est51 9b_est51 9b_est54 9b_est57 9b_est60 9b_est60 9b_est61 9b_est61 9b_est61 9b_est63 9b_est64 9b_est7 9b_est7 9b_est8	46. 9b est8 49. 9b est9 49. 9b est6 40. 9b	90. 90. 90. 90. 90. 90. 90. 90. 90. 90.

																																													ţ
																																													chance
																																													þ
																																													nredicted
																																													1
J:*	2:*	*	*.	*:	* ·	*	* ·	*	* 	<b>*</b> :6																																			resu
_	$\overline{}$	H	rod	0	0	0	ō	н		vrt	*.	*.	*.	*.	<b>*</b>	*	*	*	*	*:0	*:	*	*: 8	*.	*	*	*	*. m	*	*.	* :	* +	* + * •					* *		. •					ď
SS	_988	_9ss_	SS	-gss-	58	_95S	58	_9ss_	_gss_	_gss_	_gss1	gss5	9883	gss4	gss	9	gsg-	gss_	gs6	gss1	dssl	gssl	gssl	gss1	gssl	gssl	gss1	_gss1	_gss1	_gss5_	9882	9882	-9882 -	2000	4000	7000	4 6	gssz	4000	ים מים מים מים	988	יי ממ	9883	2 2 6 -	number
																																										J, (			the
190	191	5	193	Š.	σ c	Э (	σ,	σ,	9	0	0	0	0	0	0	0	0	0	0	-	$\overline{}$	∺	$\overline{}$	H	$\overline{}$	$\overline{}$	Η.	Η,	М 1	N I	$\alpha$	N C	7 0	4 0	40	40	e c	νĊ	4 0	2 0	י פ	202	· ~		is
																																													Š
																															J														

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

36.4 13.4 277 137 BE593226 36.4 13.4 537 166 BE557229 36.4 13.4 537 166 BE557229 35.6 13.1 537 29 AV387571 35.6 13.1 1070 136 BE536334 34.6 12.7 576 141 BE907816 34.6 12.7 576 141 BE907816 34.6 12.7 576 141 BE907816 34.2 12.6 535 161 BE032541 34.2 12.6 535 161 BE032543 34 12.5 562 166 BE363650 34 12.5 562 166 BE363650 34 12.5 562 166 BE363650 33.6 12.4 177 103 AIS09388	Result		Query				;
13.4 277 137 BES 93.226 13.4 537 166 BES 57.229 13.1 53.2 49 BES 57.229 13.1 1070 136 BES 5034 13.0 498 150 BES 5034 12.8 507 138 BE7 50514 12.7 576 141 BE9 07816 12.7 576 141 BE9 07816 12.6 535 161 BE0 3.541 12.6 536 161 BE0 3.541 12.5 546 161 BE0 3.541 12.5 562 166 BES 63.50 12.5 562 166 BES 60.01 12.5 562 166 BES 60.01 12.5 562 166 BES 60.01 12.4 177 103 AA 80 94.38	NO.	score	Match	Length	90	D.	Description
13.4 537 166 BE357229 13.2 462 143 BF039993 13.1 1070 136 BE536034 12.8 507 138 BE705512 12.7 576 141 BE907816 12.7 565 217 AZ201624 12.6 535 161 BE032541 12.6 535 161 BE032541 12.5 341 163 BEZ75683 12.5 562 166 BE3650 12.5 562 166 BE361027 12.5 562 166 BE361027 12.5 562 166 BE361027 12.4 177 103 AA980438	7	36.4	13.4	277	137	BE593226	BE593226 WS1_99_B0
13.2 462 143 BP039993 13.1 537 29 AV38757 13.1 1070 136 BE536034 12.8 507 138 BE705147 12.7 576 141 BE907816 12.6 570 24 AT746678 12.6 535 161 BE032541. 12.6 536 161 BE032543 12.5 340 163 BB12683 12.5 562 166 BE361027 12.5 562 166 BE361027 12.5 562 166 BE361027 12.4 177 103 AN890438	7	36.4	13.4	537	166	BE357229	BE357229 DG1 147 B
13.1 537 29 AV887571 13.1 1070 136 BE536034 13.0 498 150 BF60532 12.8 507 138 BE705147 12.7 576 141 BE907816 12.6 535 161 BE93541 12.6 535 161 BE935543 12.5 341 163 BE127683 12.5 370 166 BE363550 12.5 562 166 BE361027 12.5 562 13 AA880438 12.4 177 103 AA880435	m	36	13.2	462	.143	BF039993	
13.1 1070 136 BE536034: 13.0 498 150 BF606532 12.8 507 138 BF705147 12.7 576 141 BE907816 12.6 535 14 AZ201624 12.6 535 161 BE032541. 12.5 546 161 BE032543 12.5 340 166 BE3650 12.5 562 166 BE361027 12.5 562 166 BE361027 12.5 127 103 AA880438 12.4 177 103 AA880435	c 4	35.6	13.1	537	58	AV387571	AV387571 AV387571
13.0 498 150 BF606532 12.8 570 138 BE705147 12.7 965 217 A2201624 12.6 570 24 A1746678 12.6 535 161 BE032541. 12.5 346 161 BE032543 12.5 340 163 BB127683 12.5 562 166 BE361027 12.5 562 166 BE361027 12.4 177 103 AA880438 12.4 177 13 AA880435	. 5	35.6	13.1	1070	136	BE536034	BE536034 601062471
12.8 507 138 BE705147 12.7 576 141 BE907816 12.7 965 217 AZ201624 12.6 570 24 A1746678 12.6 535 161 BE032541 12.5 341 163 BE127683 12.5 370 166 BE363650 12.5 925 229 CNS0091P 12.4 177 103 AA880438 12.4 544 13 AA880435	9	35.4	13.0	498	150	BF606532	BF606532 273595 MA
12.7 576 141 BE907816 12.7 965 217 AZ201624 12.6 537 24 A7746678 12.6 536 161 BE032541. 12.5 341 163 BE127683 12.5 370 166 BE3650 12.5 562 166 BE361027 12.5 925 229 GNS0091P 12.4 177 103 AA880438 12.4 544 13 AA880435	7	34.8	12.8	507	138	BE705147	BE705147 Sc02_08f0
12.7 965 217 A2201624 12.6 570 24 A1746678 12.6 546 161 BE032541. 12.5 341 163 BB127683 12.5 370 166 BE3650 12.5 562 166 BE361027 12.5 925 229 GNS0091P 12.4 177 103 AA880438 12.4 544 13 AA880435	<b>&amp;</b>	34.6	12.7	576	141	BE907816	BE907816 601501924
12.6 570 24 AI746678 12.6 535 161 BE032541. 12.5 341 163 BEL27683 12.5 370 166 BE363650 12.5 562 166 BE361027 12.5 925 229 CNS0091P 12.4 177 103 AA880435	ر د	34.6	12.7	965	217	A2201624	AZ201624 SP_0053_A
12.6 535 161 BE032541. 12.6 546 161 BE032543 12.5 341 163 BE127683 12.5 370 166 BE363650 12.5 562 166 BE361027 12.5 9255 229 CNS0091P 12.4 177 103 A1990438 12.4 544 13 AA880435	10	34.4	12.6	570	24	AI746678	AI746678 ul06b05.y
12.6 546 161 BED32543 12.5 341 163 BEL27683 12.5 370 166 BE36550 12.5 562 166 BE361027 12.5 925 229 GNS0091P 12.4 177 103 AL909438 12.4 544 13 AA880435	11	34.2	12.6	535	161	BE032541.	BE032541 131940 MA
12.5 341 163 BE127683 12.5 370 166 BE36550 12.5 562 166 BE361027 12.5 925 229 CNS0091P 12.4 177 103 A1909438 12.4 544 13 AA880435	12	34.2	12.6	546	161	BE032543	BE032543 131942 MA
12.5 370 166 BE363650 12.5 562 166 BE361027 12.5 925 229 CNS0091P 12.4 177 103 A1909438 12.4 544 13 AA880435	13	34	12.5	341	163	BE127683	BE127683 DEPA1432
12.5 562 166 BB361027 12.5 925 229 CNS0091P 12.4 177 103 A1909438 12.4 544 13 AA880435	14	34	12.5	370	166	BE363650	BE363650 WS1_64_G1
12.5 925 229 CNS0091P 12.4 177 103 AI909438 12.4 544 13 AA880435	15	34	12.5	562	166	BE361027	BE361027 DG1_69_A0
12.4 177 103 A1909438 A1909438 12.4 544 13 AA880435 AA880435	c 16	. 34	12.5	925	229	CNS0091P	AL053013 Drosophil
12.4 544 13 AA880435 AA880435	c 17	33.6	12.4	177	103	AI909438	AI909438 IL-BT208-
	18	33.6	12.4	544	13	AA880435	AA880435 vw89f07.r

prepared by

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                BASE COUNT
                                                                        Best Loc
Matches
                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40
                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                  BE357229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                   g
                                                                                                                                                                                   g
                                                                                                                                                                                                                                   Dp
                                                                                                                                                           ð
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
            AW318852 un08d12.y
AW475303 un64b04.y
BE414190 SCU007.CO
BE216356 HV_CEb001
BF68554 602140603
AL180699 Tetraodon
BF14394 601512140
BE228410 98AS2556
AT712497 UI-R-AFI-
AI598187 tn14f06.x
A1062250 GH01393.5
                                                                                                                                                                                          BE400019 AWB010.B0
AW786287 119229 MA
BF312933 601896391
AM52415 AG52415
AW72653 GA_Ea002
AW72553 AU075583
BF620318 HVSMEC001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="Water-stressed 1 (WS1)"
//clone_lib="Water-stressed 1 (WS1)"
//note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld: Vector: Lambda Zap; Site_l: XhOI: Site_2: The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were
                                                                                                                                                          C97983 C97983 Rice
AI064071 GH04331.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 277)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                   AU092344 AU092344
                                                                                                                                                                                                                                                                                                         AU064144 AU064144
W80370 zh50f02.sl
                                                                                                                                                                                                                                                                                  AA360834 EST70082
AA361196 EST70439
                                                                                                                                                                                                                                                                                                                                                                                                                               bicolor cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                     18-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rm. 2502, Athens, GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       An EST database from Sorghum: water-stressed plants Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                  BES93226 277 bp mRNA EST
WS1_99_B03.g1_A002 Water-stressed 1 (WS1) Sorghum
mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. 277
/organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                                                             AW729623
AU075583
BF620318
                                                                                                                                                                                                                                                                                            AA361196
16 AU064144
                                                                                                                                                                                  AU092344
BE400019
AW786287
                                                          BF685554
CNS024F6
                                                                                                                     AI712497
AI598187
AI062250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence start: 5
High quality sequence stop: 246
POLYA-No.
                                                                                                           BE228410
                                                                                     BF143984
                                                                                                 BE889888
                                                                                                                                                                                                                      BF312933
                                                                                                                                                                      AI064071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:4558"
                                                                                                                                                           C97983
                                                                                                                                                                                                                                                                                  AA360834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequences have been trimmed below Phred quality 16. The is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The University of Georgia
Plant Sciences Building, F
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE593226.1 GI:9848299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                     150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seg primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Department of Botany
                                                          891
1016
1056
1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sorghum.
8899988
888888
888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                            RESULT
BE593226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 537)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note=_organ: 5.6ay-old dark grown seedlings; Vector:
Lambda Zap; Site_1: XhoI; Site_2: EcoRI; The library was
made from poly-A-RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE357229 537 bp mRNA EST 20-JUL-2000 DG1_147_B02.91_A002 Dark Grown 1 (DG1) Sorghum bicolor CDNA, mRNA
                                                                                                                                                                                                                                                    100 cggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 159
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                         40 cotcaaggagotcattgaggagotggtcaacatcacccagaatcaggcatccctctgcaa 99
                                                                                                                                                                                                22 CCCCATGGAGAGGCTCGGGGAGCCCGGCGAATCGCGCCGGTGGTCGGGTTCTCTCTGGAC 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgcaa 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GA 30602-7271, USA
                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                 Length 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C.,
                                                                                                 DB 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rm. 2502, Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
                                                                                            Score 36.4; DB Pred. No. 6.3; 0; Mismatches
                  ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 36.4; DE
Pred. No. 7.3;
0; Mismatches
excision.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence start: 31
High quality sequence stop: 514
POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequences have been trimmed
below Phred quality 16. The
is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Cordonnier-Pratt Department of Botany
mass
78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The University of Georgia
Plant Sciences Building, F
                                                                                                                                                                                                                                                                                                                                   tctgatcaatgtctccgactgc 181
                                                                                                                                                                                                                                                                                                                                                                       142 TCTGATCTTTAGCTTCTACAGC 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:9298786
                                                                                               13.4%;
53.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13.4%;
ilarity 53.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: PolyTMix
                    81
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Loca 76; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE357229
BE357229.1
                                                                                                                   Similarity
                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence
                47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83
                                                                                                     Local Sim
```

```
EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                RESULT 4
AV387571/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
COMMENT
                                          101
                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                QQ
                                                                          qq
                                                                                                                    ò
                                                                                                                                                          g
                                          δ
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Funding for cattle EST sequencing was provided by the USDA National Research inflative, Animal Genome Resource Grant AG 99-3205-8534 tto H. A. Lewin and J. E. Womack. Base Calling/Quality Scores: PHRED from Washington University Genome Center. Vector Trimml 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovidae; Bovinae; Bos.
1 (bases 1 to 462)
Lewin,H.A., Soares,M.B., Rebeiz,M., Pardinas,J., Liu,L. and Larson
                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΙΓ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Organ: placenta; Vector: pT7T3Pac; Site_1: EcoRI; Site_2: NotI; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. " 3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cross_match from Washington University Genome Center PHRAP suite. This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                  BF039993 462 bp mRNA EST 10-OCT-2000 BP250023B10D12 Soares normalized bovine placenta Bos taurus cDNA clone BP250023B10D12 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Lewin, H. A. W. M. Keck Center for Comparative and Functional Genomics University of Illinois at Urbana-Champaign 340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana,
249 CCCCATGGAGAGGCTCGGGGAGCCCGGCGACCATCGCGCCGGTGGTCGGGTTCCTCCTCTGCAC 308
                                          eggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 159
                                                                          309 ceacecceceasises carcaaceccases carcaceceaaces es con constant 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="Soares normalized bovine placenta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 36; DB 143; Length 4
Pred. No. 9.1;
0; Mismatches 111; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BACKWARD: ATTAACCCTCACTAAAG
Insert Length: 462 Std Error: 0.00
Plate: BP250023B10 row: D column: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: AGCGGATAACAATTTCACACAGGA High quality sequence stop: 462.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9913"
/clone="BP250023B10D12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FORWARD: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /lab_host="DH10B"
                                                                                                                                          369 TCTGATCTTTAGCTTCTACAGC 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 217 333.5998
Fax: 217 244 5617
Email: h-lewin@uiuc.edu
                                                                                                                                                                                                                                                                                                              BF039993.1 GI:10757048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /sex="female
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13.2%;
ilarity 47.9%;
Conservative
                                                                                                                  160 tctgatcaatgtctccgactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovine ESTs
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 102; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRimers
                                                                                                                                                                                                                                                                                                                                                                                          taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51801,
                                                                                                                                                                                                                                                                                                                                                                                              Bos
                                                                                                                                                                                                                                                                                                                                                                          SOV
                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                  RESULT
BF039993
                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                      LOCUS
a
                                      ò
                                                                        g
                                                                                                                  ò
                                                                                                                                                      9
```

```
The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Emall: ynakamu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chlamydomonas reinhardtii.
Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.

1 (bases 1 to 537)
Asamizu,E., Nakamura,Y., Sato,S., Fukuzawa,H. and Tabata,S.
A large scale structural analysis of cDNAs in a unicellular green alga, Chlamydomonas reinhardtii. I. Generation of 3433
non-redundant expressed sequence tags
DNA Res. 6 (6), 369-373 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA EST 29-SEP-2000 reinhardtii C9 Chlamydomonas reinhardtii
                                                                                                                                                                                                           233 CTGGTGGGCAAGGGGCGCTTCGCCGAGNTCTACAAGGCCAAGCTGAAGCAGAACACGTCT 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgca 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318
113 CTGATGGAGTTCAGTGAGCACCTGGCCATCATCCTGGAGGACGACCGCTCCGACATCAGC 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        497 GCCAGGCATCACCCCCTGCAGACACATTCATCCGCAAGTTGAAGGTGCTGAAGGCGCCCCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tggtcaacatcacccagaatcaggcatccttctgcaacggcagcatggtgtggagcgtca 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             437 AGTTCGACATCACCAAGCTCATGGAGGTGCACGGTGACTACAGCGAGGAGGTGGGCGCCA 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gccttgcctccccgagccctgtgactccctccccaacctcaaggagctcattgaggagc 62
                                                  ggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct
                                                                                                173 TCCACCTGCGCCAACAACATCAACCACAACAGGGAGCTGCTGCCCATCGAGCTGGACACC
                                                                                                                                                        ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATCGAGCGCCCCCGCCGCCGCCCCCCCGCCGTCGAGGGCCGCCCACCGCCTAAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Chlamydomonas reinhardtii C9" .
/dev_stage="photoautotrophic growth"
/note="Vector: pBluescriptII SK-; Site_1: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 35.6; DB 29;
Pred. No. 12;
); Mismatches 124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence
                                                                                                                                                                                                                                                           221 tgctctcaaaagcccgcggcagggcagatttcc 253
                                                                                                                                                                                                                                                                                                             293 GAGCAGTTCGAGACCGTGGCCGTCAAGATCTTC 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C9"
/db_xref="taxon:3055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="CM026e03_r"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Yasukazu Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chlamydomonas reinhardtii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                   AV387571 537 bp
AV387571 Chlamydomonas
CDNA clone CM026e03_r,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:6541787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13.1%;
ilarity 47.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             220 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          XhoI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 110; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AV387571.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

ö

ö

Gaps

ó

41 ctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaac 100

```
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                          BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                         FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE705147.1 GI:10093412
                   Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 507)
                                                                                                                                                     Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 47.9
Matches 102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                             1. .498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Secale cereale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                 REFERENCE
                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
BE705147
                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                     TITLE
                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Organ: cervix; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sal1: Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.5 kb. Library prepared by Life Technologies.
                                                                                                                                                            Homes, Sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1070)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                               BE536034 1070 bp mRNA EST 09-AUG-2000 601062471F1 NIH_MGC_10 Homo sapiens cDNA clone IMAGE:3448912 5',
                                                                                                                                                                                                                                                                                                                                   Tissue Procurement: ATCC
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Incyte Genomics, Inc.
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.go.
Plate: LLAM6424 row: n column: 17
High quality sequence start: 3
High quality sequence stop: 5.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggtcaacatcacccagaatcaggcatccttctgcaacggcagcatggtgtggagcgtcaa 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     987 GCCCACACTTTCCCACAAGTAAGCGCCCCCTTCCACAGGGTCCATACTCTGGCACTTCAA 928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 cettgeeteecegageeetgtgaeteeeteecaaeeeteaaggageteattgaggaget 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 35.6; DB 136; Length 1070; Pred. No. 14; 0; Mismatches 54; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF606532 498 bp mRNA EST 1
273595 MARC 3BOV Bos taurus cDNA 5', mRNA sequence.
BF606532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 311 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                 Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NIH_MGC_10"
/cell_line="MGC36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:3448912"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                315 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /lab_host-"DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF606532.1 GI:11707239
                                                                                                                 BE536034.1 GI:9764679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.1%;
55.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rechnologies.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 247 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 55.7'
                                                                              mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ø
                                             BE536034
                                                                                               BE536034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                197
                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cc 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
            RESULT 5
BE536034/c
                                               LOCUS
                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        927
                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
BF606532
                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophyta,
Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae,
1 (bases 1 to 498)
Smith.T.P.L., Casas, E., Stone, R.T., Heaton, M.P., Grosse, W.M.,
Bennett, G.A., Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Laegreid, W.W. and Keele, J.W.
Design and use of four pooled tissue normalized cDNA libraries for
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pcMv SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from marrow, alveolar macrophage, ovary, fetal semitendonosus muscle, and fetal longlassimus muscle."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE705147 507 bp mRNA EST 12-SEP-2000 SC02_08f05_A SC02_AAFC_ECORC_cold_stressed_winter_rye_seedlings Secale cereale cDNA clone Sc02_08f05, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41 ctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaac 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 ggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 TCCACCTGCGCCAACAACATCAACAACAACAGGAGCTGCTGCCCATCGAGCTGGACACC 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162 CTGATGGAGTTCAGTGAGCACCTGGCCATCATCGTGGAGGACGACGCTCCGACATCAGC 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 111; Indels
                                                                                                                                                                                                                                                      USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 35.4;
Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              221 tgctctcaaaagcccgcggcaggcagatttcc 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             342 GAGCAGTTCGAGACCGTGGCCGTCAAGATCTTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 3BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plate: 61 row: H column: 2
Seg primer: ATTTAGGTGACACTATAG.
```

```
Query Match
Best Local Similarity
Matches 100; Conserv
                                                                                                                                                                                                                     ಥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20402566
                                                                                                                                                                                                                     108
    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZ201624/C
LOCUS
                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                        /dev_stage="seedling three-leaf stage"
//dev_stage="seedling three-leaf stage"
//doctor: Bluescript Sk+/Xhnl-EccRI; Site_1: Ecc RI;
//doctor: Nho I: Sampled three-leaf seedlings treated for
one week at 2cc, 12 hrs light/day. Library made with
Stratagene UNIZAP XK Kit/(not packaged). cDNA is directly
ligated into Sk+/Xhol-EccRI, then electroporated into
TOPIO cells (Invitrogen).
Singh,J.A., Piche,C., Couroux,P., De Moors,A., Harris,L.J., Hattori
,J.I., Ouellet,T., Robert,L.S., Sprott,D. and Tinker,N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings
                                                                                                                                                                                                                                                                       /cultivar="Puma (winter rye)"
Ab_xref="teaxon:4550"
/clone="sc02"
/clone_1ib="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seedl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia: Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 576)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                Unpublished (2000)
Contact: Singh,J.A.
Eastern Cereal and Oilseed Research Centre
Eastern Cereal and Agri-food Canada
Agriculture and Agri-food Canada
960 Carling Avenue, Bldg. 20, Ottawa, Ontario, KIA 0C6, Canada
Tel: (613) 759-1662
Fax: (613) 759-1701
Email: singhja@em.agr.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE907816 576 bp mRNA EST 20-OCT-2000 601501924F1 NIH_MGC_70 Homo sapiens cDNA clone IMAGE:3903965 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://lmage.llnl.gov
Plate: LLAM9708 row: o column: 06
High quality sequence stop: 571.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              147 GCCTGCACGTCGACGCCGTCCAGCACCRACAARARCCCCACCGAGGAGCAGGAG 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 gcotcoccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 34.8; DB Pred. No. 20; 4; Mismatches
                                                                                                                                                                                                                                                       /organism="Secale cereale"
                                                                                                                                                                                                                                                                                                                                                                        /tíssue_type="leaf, crown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE907816.1 GI:10401759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ch 12.8%;
1 Similarity 53.3%;
64; Conservative 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           numan.
                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                          COURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                      TITLE
                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:393965"
/clone=lib=NIH_MGC_70"
/tissue_type="eptthelloid carcinoma"
/lab_host="DHIOB (phage-resistant)"
/note="Organ: pancreas; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.1 kb. Library constructed by Life Technologies."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Echinoidea; Euchinoidea; Echinoida; Eleutherozoa; Echinozoa; Strongylocentrotidae; Euchinoidea; Echinoida; Strongylocentrotidae; Strongylocentrotidae; Strongylocentrotus.

1 (bases 1 to 965)
Cameron, R.A., Mahairas, G., Rast, J.P., Martinez, P., Biondi, T.R., Swartzell, S., Wallace, J.C., Poustka, A.J., Livingston, B.T., Wray, G.A., Ettensohn, C.A., Lehrach, H., Britten, R.J., Davidson, E.H. and Hood, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AZ201624 965 bp DNA GSS 31-AUG-2000 SP-003-AZ-B1_2-SFGE Strongylocentrotus purpuratus, purple sea urchin, sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=53 Col-24 Row-C, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 gctggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtggagcgt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Strongylocentrotus purpuratus
Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 tggccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   351 GCGCCTCCGTTTCTGCCAGTGTTGTTCTTCCAAGGCAGCTTTCATGCTCAGCTGTGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  additional resources
Proc. Natl. Acad. Sci. U. S. A. 97 (17), 9514-9518 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A sea urchin genome project: Sequence scan, virtual map,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                         DB 141; Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Strongylocentrotus purpuratus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Cameron, RA, Davidson, EH, Hood,
                                                                                                                                                                                                                                                                                                      147 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                      Score 34.6; I
Pred. No. 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Division of Biology 156-29
California Institute of Technology
Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Class: BAC ends
High quality sequence stop: 965.
Location/Qualifiers
1. 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagegecatecaaaggaeeeagaggatge 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411 CAGCTCAATCTCAAGACCCTGAAGGGTGC 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Strongylocentrotus purpuratus.
                                                                                                                                                                                                                                                                                                   147 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: acameron@caltech.edu
Plate: 53 row: C column: Seq primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ201624.1 GI:8396538
                                                                                                                                                                                                                                                                          Technologies.
                                                                                                                                                                                                                                                                                                                                                                                                                      12.78;
47.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: (626) 395-8421
Fax: (626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
```

```
pig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sus
                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE032541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                             Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AI746678 570 bp mRNA EST 22-JUN-1999 ul06bD5.yl Sugano mouse kidney mkia Mus musculus cDNA clone LIMAGE:2065233 5' similar to 9b:D0015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); 9b:M13685 Mouse prion protein (MOUSE); mRNA sequence.
                                     /clone_lib="Strongylocentrotus purpuratus, purple sea
urchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC Clones in E-Coli
DH10B"
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 570) Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., The Washu-NCI Mouse EST Project 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: kidney; Vector: pME18S-FL3; Site_1: DraIII (GACGATGTG); 1st strand cDNA was primed with an oligo(dT) primer with an oligo(dT) primer (ATGTGGCCTTTTTTTTTTTTTTT); double-stranded cDNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (Info@lmage.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                           791 GCTTTGGTCTCTAGGGTGCTATGAAAGAATATGATCTTTGAAGGGCACCACAGGGGAAC 732
                                                                                                                                                                                                                                                                                                                                                                                                                             731 ccgregreacacecegraceagracresecacrearsersecarsgragregeses 672
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                 3 gccttgcctccccgagccctgtgactccctccccaacctcaaggagctcattgaggagc 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington University School of Medicine, 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA Tel: 314 286 1800 Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                   63 tggtcaacatcacccagaatcaggcatccctctgcaacggcagcatgtgtggagcgtca
                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                             Score 34.6; DB 217; Length 965;
Pred. No. 27;
0; Mismatches 84; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 acctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgt 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 others
                                                                                                                                                                                                                                                       84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Marra M/WashU-NCI Mouse EST Project 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="Sugano mouse kidney mkia"
/sex="female"
                   /clone="Plate=53 Col=24 Row=C"
                                                                                                                                u
                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 283.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref-"taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:2065233"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: custom primer used
/db_xref="taxon:7668"
                                                                                                                                ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev_stage="adult"
                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="C57BL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI746678.1 GI:5124942
                                                                                                                                                                                                               12.78;
                                                                                                                                                                                                                                   50.3%;
                                                                                                                           178 c
                                                                                                                                                                                                                                                         85; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               house mouse.
                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGI:994421
                                                                                                                           304
                                                                                                                                                                                                             Query Match
Best Local S
Matches 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AI746678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
```

g

ò a

qq ò

ò

```
ligated to a DraIII adaptor [TGTTGGCCTACTGG], digested and cloned into distinct DraIII sites of the pME18S-FL3 vector (5' site CACTGTGTG, 3' site CACATGTG). XhoI should be used to isolate the CDNA insert. Size selection was performed to exclude fragments 41.5kb. Library constructed by Dr. Sumio Sugano (University of Tokyo Institute of Medical Science). Custom primers for sequenching: 5' end primer CTTCTGCTCTAAAAGCTGCG and 3' end primer CGACCTGCAGCTGCAG." 8 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4390
Fax: 402 762 4390
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                   ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E., Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: pCMV SPORT6; Site_1: Xbal; Site_2: Xhol; Library made from pooled tissue from day 11, 13, 15, 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 ggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaa 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           403 CGTCAATATCACCATCAAGCAGCACCACGACCACCACCACCACCAAGGGGAAACTTCAC 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 cettgeeteecegageeetgtgaeteeeteeaaceeteaaggageteattgaggaget 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                              Length 570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE032541 535 bp mRNA EST 0°
131940 MARC 1PIG Sus scrofa cDNA 5′, mRNA sequence.
BE032541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                              DB 24;
                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                            Score 34.4; 1
Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124 cctgaccgccggcatgtactgcgcagctc 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        463 CGAGACCGATGTGAAGAATGATGNAGCGC 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             te: 63 row: E column: 8
primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Sus scrofa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9823"
/clone_lib="MARC 1PIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="pooled"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and -minmatch 12 options.
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and 30 embryos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE032541.1 GI:8327550
                                                                                                                                                                                                                                                                                                                                                         12.6%;
51.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151 c
                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 51.7
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plate: 63
                                                                                                                                                                                                                                                  140 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
```

```
; Andropogoneae; Sorghum. 1 (bases 1 to 370)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                    Norway rat.
Rattus norvegicus
                                                                                                   mRNA sequence.
BE127683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 cctgaccgccg 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271 GGAGACCGNCG 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE363650.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sorghum.
                                                                                                                                                                                                                                                                                                                                                                              Biology
                                                                                                                                                                                                                                                                                                                             cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                               RESULT 1
BE127683
LOCUS
                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
BE363650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)

AL Unpublished (2000)

Contact: Smith TPL

USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA

Tel: 402 762 4356

Fax: 402 762 4390

Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
1 (bases 1 to 546)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E. Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pCMV SPORT6; Site_1: Xba1; Site_2: Xho1; Library made from pooled tissue from day 11, 13, 15, 20, and 30 embryos." 2 others 152 c 169 g 98 t 2 others
                                                                                                                                    227 CCTGTGACCACCACGGTCTACGATGACAAGGCAATGAGAAGAGCATCACCGTGGCCCAG 286
                                                                                                               20 cctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacccag 79
                                                                                   Gaps
                                                                                                                                                                                   80 aatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcat 138
                                                                                                                                                                                                      287 GATGAGGCATCCGCCCCAACACCATCGAGGGCCTGGCCAACTGAACTGAAGCTGCCTT 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80 aatcaggcatccctctgcaacggcagcatgtgtggagcgtcaacctgaccgccggcat 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 cctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccag 79
                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
0
                                               Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 546;
                                                                                                                                                                                                                                                                                        BE032543 546 bp mRNA EST 0
131942 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BE032543
                                                                               53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 161;
                                               DB 161;
                                              Score 34.2; DE
Pred. No. 30;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 12.6%; Score 34.2;
1 Similarity 55.5%; Pred. No. 30;
66; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9823"
/clone_lib="MARC 1PIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACKWARD: GTTTTCCCAGTCACGACG
Plate: 63 row: E column: 10
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Sus scrofa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                           GI:8327552
                                               12.6%;
55.5%;
                                               Query Match
Best Local Similarity 55.5
Matches 66; Conservative
                                                                                                                                                                                                                                                                                                                                                         BE032543.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                              scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                125
                                                                                                                                                                                                                                                                                                                                                                                                                Sus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                  RESULT 12
BE032543
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
ORIGIN
                                                                                                                                               g
                                                                                                                                                                                   ò
                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
BE127683 341 bp mRNA EST 15-JUN-2000
DEPA1432 Rat Lambda ZAP Express Library Rattus norvegicus CDNA 5',
                                                                                                                                                                                                                                                           Eukaryota, Métazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae,
                                                                                                                                                                                                                                                                                                                                                                                     Sleeman, M.A., Murison, J.G., Strachan, L., Kumble, K.D., Glenn, M.P., McGrath, A., Grierson, A., Havukkala, I., Tan, P.L.J. and Watson, J.D. Expressed sequence tags of cDNA clones from rat dermal papilla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE363650 370 bp mRNA EST 20-JUL-2000 WS1_64_G10.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    211 TGTCAATATCACCATCAAGCAGCATACAGTCACCACCACCACCAAGGGGGAGAACTTCAC 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64 ggtcaacatcacccagaatcaggcatccctctgcaacggcaggatggtggagggtcaa 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 cettgeeteceegageeetgtgaeteceteceeaaceeteaaggageteattgaggaget 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genesis Research and Development Corporation Limited P.O. Box 50, 1 Fox St, Parnell, Auckland, New Zealand Far: 0064 9 373 5600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 341;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="Dark-Agout1" /db_xref="taxon:10116" /db_xref="taxon:10116" /clone_lib="Rat Lambda ZAP Express Library" /tissue_type="vibrissae" /cell_type="dermal papilla" a 88 c 105 g 58 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.5%; Score 34; DB 163;
53.4%; Pred. No. 30;
tive · 0; Mismatches 61;

    .341
    /organism="Rattus norvegicus"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 341 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: m.sleeman@genesis.co.nz
Seq primer: T3 forward
                                                                                                                                BE127683.1 GI:8550422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:9305207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Sleeman MA
                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 341)
```

```
Search completed: May 13, 2001, 11:39:46 Job time: 16461 sec
                                                                                                                                                                                                                                                                                                                                                                                                                64;
                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                               source
                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Sorghum bicolor"
/db_xref="taxon:458"
/clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 s 8 after water was withheld; Vector: Lambda Zap; Site_1: XhoI;
Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZaP II. Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnollophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó
                                                                                                                                                                                                Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Department of Botania, vieture many The University of Georgia Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA Tel: 706 542 1860 Exax: 706 542 1805 Email: mmpratt@uga.edu Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence is 20.
Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE361027 562 bp mRNA EST 20-JUL-2000
DG1_69_A02.b1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54 CCCTTCGGCGAGGTCAAGGACGTCAAGACGCCGCTGGACCAGTCCACGCAGGAAGCACGC 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29 ccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggca 88
                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and
                                                              Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271,
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89 tccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtac 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     114 TCCTTCGCTTCGTCATTGAGCGCGGGGAGGCGCGCGCGCTGCCATGGAC 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 166; Length 370; 31;
                                            EST database from Sorghum: water-stressed plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  An EST database from Sorghum: dark-grown seedlings Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 34; DB Pred. No. 31; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                         High quality sequence start: 32 High quality sequence stop: 368
                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:9302584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.5%;
56.1%;
                                                                                                                                                                                                                                                                                                                      Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 12.5
Best Local Similarity 56.1
Matches 64; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE361027
BE361027.1
                                                                                                                                                                                                                                                                                                                                                                                       POLYA-Yes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92
                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
COMMENT
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE361027
                                                                                        COMMENT
```

QQ δ q

ð

```
/db_xref="taxon:4558"
//db_xref="taxon:4558"
//done_lib="bark Grown 1 (DG1)"
/note="organ: 5-day-old dark-grown seedlings; Vector:
/note="organ: 5-day-old dark-grown seedlings; Vector: 3-day-grown seedlings; Ve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29 ccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggca 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89 tecetetgeaacggeageatggtgtggagegteaacetgacegeeggeatgtae 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 34; DB 166;
Pred. No. 34;
0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                          /organism="Sorghum bicolor"
Seq primer: JEN REV
High quality sequence stop: 560
                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12.5%;
56.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                         POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              130
```

:: 0

gb\_sts1:\*
gb\_sts2:\*

gb\_sts3:° gb\_sy:\*

\*:un\_d£

Sequence:

Title:

Run on:

Searched:

em\_ro:\* em\_sts:\*

em\_pl:\*

em\_un:\*

em\_sy:\*

```
Re
                                                                                     May 13, 2001, 14:16:09; Search time 9342.78 Seconds (without alignments) 438.831 Million cell updates/sec
                                                                                                                                                     US-09-451-527-90
278
1 atggcgctctggttgactgt......gcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                 2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                 1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                           OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                  IDENTITY_NUC Gapor 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_fun:*
em_htgo_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_htgo_rod:*
em_htg_huml:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_htg_hum7:*
em_htg_hum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_htg_inv2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   htg_other:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_hum6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_invl:*
                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_htg_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_hum6:*
em_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_bal:*
gb_ba2:*
gb_ba3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_ov:*
gb_pat1:*
gb_pat2:
gb_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_hum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_in1:*
gb_in2:*
gb_in3:*
gb_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                         GenEmbl:*
                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                     Scoring table:
```

Database :

gb\_rol:\* gb\_ro2:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Ç
	G
	۲
	ρ
	5
	2
	2

Description	AF244915 Canis fam	L06801 Homo sapien	X69079 H.sapiens i	134548 Sequence 1	AF043334 Homo sapi	A29948 Coding segu	158488 Sequence 15	AF072807 Bos tauru	A29950 Nucleic aci	158489 Sequence 17	A29931 Sequence co
ID	AF244915	HUMIL13A	HSNC30	I34548	AF043334	A29948	I58488	AF072807	A29950	158489	A29931
DB	7	93	92	10	88	6	10	7	6	10	σ
Length	1302	1270	1282	1290	417	1297	1297	343	384	384	336
Query re Match Length DB ]	100.0	68.7	68.7	68.7	68.1	68.1	68.1	0.99	53.3	53.3	53.1
Score	278	191	191	191	189.4	189.4	189.4	183.4	148.2	148.2	147.6
esult No.	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	7	٣	4	2	9	7	æ	6	10	11

ö

υO

```
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1270)
MCKenzie, A.N.J., Culpepper, J.A., de Waal Malefyt, R., Briere, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., Vries, J.E., Banchereau, J. and Zurawski, G.R. Interleukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function
                                                                                                                                                                                                                                                                                               231
                                                                                                                                                                     agocottgtgactcoctcoccaaccotcaaggagotcattgaggagotggtcaacatcacc 120
                                                                                                                                                                                                                                        171
                                                                                                                                                                                                                                                                    cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                           181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                           Gaps
                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cytokine; growth factor; interleukin 13; regulatory protein
                                                                                                                                                                                                                           1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                                                                                                    CAGAATCAGGCATCCCTCTGCAACGCAGCATGGTGTGGGAGCGTCAACCTGACCGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1270;
                                                                                               Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 191; DB 93;
Pred. No. 4.7e-36;
0; Mismatches 45;
                                                                                              Score 278; DB 7;
Pred. No. 6.4e-57;
                                                                                                                                                                                                                                                                                                                                                                                                 292 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCC 329
                                                                                                                                                                                                                                                                                                                                                                                  241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
              SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="GI:186276"
                                        307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens cDNA to mRNA.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336
                                        340
                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                              100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 68.7%;
Best Local Similarity 82.8%;
Matches 231; Conservative
                          .1302
18 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         L06801.1 GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335 c
                     448. ...
318 c
                                                                                                                          Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .443
                                                                                                             Similarity
                                          Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93234572
                                        337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_site
                                                                                               Query Match
                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                           3'UTR
BASE COUNT
                                                                                                                                                                                                            61
                                                                                                                                                                                                                                        112
                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMIL13A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                       δ
                                                                                                                                                                               q
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/codon_start=1
/product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="GI:7528274"
/translation="MALWLTVVIALTCLGGLASPSFVTPSPTLKELIEELVNITQNQA
                                                                                          158481 Sequence 2
158495 Sequence 26
M23504 Mus musculu
134549 Sequence 3
L26913 Rattus Norv
AF276990 Canis fam
L42080 Homo sapien
L13029 Human inter
U10307 Human inter
                                                                                                                                                                                                                                                                                            L42079 Homo sapien
L13028 Mouse inter
AC084392 Homo sapi
AC005742 Mus muscu
AC020886 Mus muscu
                                                                                                                                                                                                                     U31120 Human inter
AC044039 Homo sapi
AC074127 Homo sapi
AC074127 Homo sapi
AJ132441 Bos tauru
                                                                                                                                                                                                                                                                                                                                                                    A29941 Oligonucleo
I58485 Sequence 12
                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 10
                                                                                                                                                                                                                                                                                                                                                                                                                         M33952 Rat neurona
U42976 Rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
158494 Sequence 24
                                                                  186195 Sequence 1
A29930 Sequence co
                                                                                                                                                                                                                                                                                                                                                                                               Sequence co
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL359215 Streptomy
A29940 Sequence co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 1302)
Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length cDNA and expression of biologically active recombinant protein
J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
              AR027065 Sequence
                                        Sequence 1
                                                     AR027062 Sequence
                          186198 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                            I58483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915

    1. .1302
    /organism="Canis familiaris"
    /db_xref="taxon:9615"
    .51

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                         RATNACHRR5
RNU42976
                                                                                                                                                                                 HUM11DC992
                                                                                                                                                                                                                                                                                               HUM11DC98Z
                                                                                                                                                                                                                        HSU31120
AC004039
AC074127
AC074127
                                                                                                                        MUSSTCPE
I34549
                                                                                                                                                                                                                                                                                                                                       AC005742
AC020886
                                                                                                                                                     RATIL13A
AF276990
                                                                                                                                                                                               HUMIL13B
                                                                                                                                                                                                            HSU10307
                                                                                                                                                                                                                                                                                                                           AC084392
                                                                                                                                                                                                                                                                                  BTA132441
                                                                                             58481
                                                                    186195
                                                                                                                                                                                                                                                                                                                                                                                                           158483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A29940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF244915.1 GI:7528273
                                                                 10.6
                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                     94
77
75
75
75
75
                                                                                                                                                                                                                                                                                               93
94
94
96
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .447
                                                                                                                                                                                            4600
4740
5670
                                                                                                                                                                                                                                                                                                                                       159500
237823
                                                                                                                                                                                                                                                     8469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dog.
Canis familiaris
                                                                                                                                                                  213343
                                                                                                                                                                                                                                        50282
                                                                                                                                                                                                                                                                                                                           142732
                                                                                                                                                                                                                                                                               36.6
36.6
36.6
36.6
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20485146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (ang, S.
                                                                                                                                                                               101.8
101.8
101.8
                                                                                                                                                                                                                                                     101.8
101.8
           146.4
146.4
146.4
146.4
                                                                                                                                                                                                                          101.8
                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PUBMED
```

/ERSION

rocus

de

1;

FEATURES

```
/db_xref="SWISS-PROT:P35225"
                                                                                                                     /product="NC30; alternative"
117, .452
                                                                                                                                                                                                                                                                                                                                                             311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
JS 5596072.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        311
 /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="G1:673420"
                                                                                                                                                                         /evidence=experimental
                                                                                                                                                                                                                  /replace="a"
856. .860
/note="ATTTA motif"
                                                                                                                                                                                                                                                          373. .877
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                       1134. .1138
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="unknown"
335 c 336 q
                                                                                                                                                                                                                                                                                                                                                            д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134548 1290 bp DN
Sequence 1 from patent US
134548
                                                                                                                                                                                                                                                                                                                                                            337
                                                                                                                                                                                                                                                                                                           /note="ATTA m
1264. ...
                                                                                                                                             117. .452
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                  68.78;
82.8%;
                                                                                                   57. .116
/gene="NC30"
                                                                                                                                                                                                    /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:1825339
                                                                                                                                                                                                                                                                                                                                                          341 c
                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 68.7
Best Local Similarity 82.8
Matches 231; Conservative
                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134548.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unknown.
                                                                                                                                                                                                                                                                                                                                                            293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unknown
                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                             POLYA_Signal
                                                                                                    sig_peptide
                                                                                                                                             mat_peptide
                                                                                                                                                                                      variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches, Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE 2 (bases 1 to 1282)
Minty,A.J., Chalon,P., Derocq,J.M., Dumont,X., Guillemot,J.C., Kaghad,M., Labit,C., Leplatois,P., Liauaun,P., Miloux,B., Minty,C., Casellas,P., Loison,G., Lupker,J., Shire,D., Ferrara,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MHPLLNPLLEAGLMALLLTTVIALTCLGGFASPCPVPPSTALR
ELIEBLVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSALEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="alternative; ATG at 15 is an alternative start codon"
177
                                                                                                                                                                        225 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAG 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                17-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Mammalia; Eutheria;
1e; Homo.
                                                                                               178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                                                                                                                                                                                                                                                                   PRI
                                                                                                                                                                                                               238 aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                               285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=experimental
/protein_id="CAA48823.1"
/db_xref="GI:580330"
/db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Ver
Primates; Catarrhini; Hominidae;
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                          HSNC30 1282 bp mRNA
K69079 interleukin-13 mRNA.
K69079 I GI:297787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minty, A.J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                      lymphokine.
                                                                                                                                                                                                                                                                                                                                                                                       human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
              45
                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                   qq
                                        ò
                                                                                                ò
                                                                                                                            a
                                                                                                                                                        δ
                                                                                                                                                                                 q
                                                                                                                                                                                                               δ
```

```
1;
/translation="MALLITYTALFCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 agcctgtgactccctccccaacctcaaggagtcattgaggagttggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 GGCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237 GCCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unclassified.
1 (bases 1 to 1290)
1 (bases 1 to 1290)
Culpepper, J., McKenzle, A., Dang, W. and Zurawski, G. Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 191; DB 92;
Pred. No. 4.7e-36;
0; Mismatches 45;
```

```
/gene="IL13"
64. .399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A29948
                                                         primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                        DP.
                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="interleukin 13 precursor"
/protein_id="AACO353:1"
/db_xref="G1:205620"
/translation="MALLLTTVİALTCLGGFASPGPVPPSTALRELIEELVNITQNOK
APLCNGSMYWSINLTAGMYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSL
4.63
                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cycles;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (15-JAN-1998) Protein Engineering, General Institute of
Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong,
Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                               complete cds.
                                                                                                                                         45 ATGCCCTTTTGTTGACCACGCTCATTGCTCTCACTTGCCGCGTTTGCCTCCCCA 104
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                               21-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="second PCR"
/PCR_conditions="94C-1min, 50C-1min, 72C-3min, 30
DeltaCycler II from Ericomp"
                                                                                 atggegetetggttgaetgtggtcattgeteteacetgcetegtggettgceteceg
                                                                                                                                                                                                                                                          ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                         ë,
                           Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                     AF043334 417 bp mRNA PRI 2
Homo sapiens interleukin 13 precursor (IL13) mRNA,
AF043334
                                                      45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      forward primer (5'-cteaatcctcctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctctgc-3')
2) second PCR.
forward primer (5'-ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-gatgctttcgaagtttcagttgaa-3').
Location/Qualifiers
                                                                                                                                                                                                                                                                                                               238 aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                               285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG 323
                          Score 191; DB 10;
Pred. No. 4.7e-36;
0; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF043334.1 GI:2905619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 417)
Jang, J.S. and Kim, B.E.
                           68.7%;
82.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="IL13"
                           Ouery Match
Best Local Similarity 82.8
Matches 231; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l) first PCR :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sosa-gu, Bu
Nested PCR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                   RESULT
AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                    õ
                                                                                                            q
                                                                                                                                         ö
                                                                                                                                                                  g
                                                                                                                                                                                               ò
                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                       a
```

```
15. .455
/codon_start=1
/transl_table=11
/product="protein with cytokine like activity"
/protein_id="CAA01982.1"
/db_xref="G1:1249029"
/db_xref="G1:1249029"
/db_xref="G1:1249029"
/db_xref="G1:1249029"
/translation="whybLLNPLLALGLMALLITTVIALTCLGGFASPGPVPPSTALR
/translation="whybLLNPLLALGLMALLITTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITQNOKAPLCNGSMVWSINLTADMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFYKDLILHLKKLFREGRFN"
336 g 311 t
                                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                184 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGCCGTCGAG 243
                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Capur, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le Bouteiller, C., Laplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms Patent: EP 0506574-A 21 30-SEP-1992; ELF SANOFI
                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcactgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                4 ATGGCGCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCTTGGCGGCTTTGCCTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                          .
ښ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3;
                                                                                                                                                                        Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein with cytokine like activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1297;
                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238 aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    244 AAGACCCAGAGGATGCTGGCGGGTTCTGCCCGCACAAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       construct"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 189.4; DB 9
Pred. No. 1.1e-35;
0; Mismatches 46
                                                                                                                                                                                                        0; Mismatches
                                                                                            97
                                        13"
                                    /product="interleukin
complement(394. .417)
/note="second pcR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="synthetic c
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                              6
                                                                                            108
                                                                                                                                                                    68.18;
82.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       synthetic construct.
synthetic construct
artificial sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68.18;
82.48;
64. .399
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coding sequence for page 429948
A29948.1 GI:1249028
                                                                                              121 c
                                                                                                                                                                    Ouery Match
Best Local Similarity 82.4
Matches 230; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
```

ACCESSION AF072807  VERSION  KEYWORDS  SOURCE  ORGANISM  Bos taurus  Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;  Bovidae; Bovinae; Bos.  I (bases 1 to 343)  AUTHORS  TITLE  POUBMED  JOURNAL  Vet. Immunol. Immunopathol. 72 (1-2), 73-79 (1999)  REFERENCE  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  TITLE  PUBMED  JOURNAL  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  TITLE  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  TITLE  JOURNAL  JOURNAL  AUTHORS  TIGONA, W. T., Hirano, A. and Estes, D. M.  TITLE  JOURNAL  JO	78 a	hes 227; Conservative and a tagegrate tages of the fill of the fil	QY         178         ggcatgtactggcagctctagaatctctgatcaatgtctccgactgcagccatccaa         237           Db         181         AGCATGTACTGTGCCTGGACTCCTGATCAGCATCTCCAACTGCAGTGTCATCCAA         240           QY         238         aggacccagaggatgctgaaagcactgtgctctcaaaagcc         278           IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
	G1:247726 G1:2477726 ed. co. Leplatois, P., Magving interleukin 13 ac lin, transformed cells 5652123-A 15.29-JUL-1 coation/Qualifiers coation/Qualifiers coation-Coati	Ouery Match  Best Local Similarity 82.4%; Pred. No. 1.1e-35;  Matches 230; Conservative 0; Mismatches 46; Indels 3; Gaps 1;  Matches 230; Conservative 0; Mismatches 46; Indels 3; Gaps 1;  Oy latgogetetggttgactggteattgetetacetegetgggggettgetecece 60  IIIIIII	

```
181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Si
Matches 181;
                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                SOURCE
ORGANISM
              172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
158494
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                   RESULT
                                                                                                                                                A29931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                     g
                                                                οy
                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 17, 29-JUL-1997;
                                                                               for
                                                                                                                                                                                                                                                                                                                                                                     115 atcacccagaatc -- aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55 teccegageeetgtgaeteeeteeecaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         115 atcacccagaatc -- aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                55 teceegageeetgtgaeteeeteeecaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                                                                                           16 TCCCCAGGCCCTGTGCCTCCTCTACGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCCCAGGCCCTGTGCCTCTACGGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                       artificial sequence.

1 (Chases 1 to 384)

2 (Chases 1 to 384)

Ecput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.

Protein having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms

patent: EP 0506574-A 23 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                        172 accyccyycatytactycycayctctayaatctctyatcaatytctccyactycaycyc
                                                                                                                                                                                                                                                                                                                                                                                                                        .;
m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 384;
                                                                                                                                                                                                                                             Length 384;
                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 148.2; DB 10;
Pred. No. 1e-25;
                                                                                                                                                                                                                                                                      38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38;
                                                                                                                                                                                                                                           Score 148.2; DB 9;
Pred. No. 1e-25;
                                                                                                                                                          /organism="synthetic construct"
/db_xref="taxon:32630"
104 c 99 g 84 t
                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                             Score 148.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                138489 384 bp DNA
Sequence 17 from patent US 5652123.
158489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                       Location/Qualifiers
1. .384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="unknown"
104 c 99 q
                                                                                                                                                                                                                                           53.3%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53.3%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   I58489.1 GI:2477727
synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                       Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 81.8
Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified.
                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                     ELF SANOF
                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
            ORGANISM
                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                       REFERENCE
                                                     AUTHORS
                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
158489
LOCUS
                                                                                                                                                                                                    ORIGIN
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
(bases 1 to 336)
Caput, D., Ferrara, P.; Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 24 29-JUL-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                          Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Brotein having cytokin type activity, recombinant DNA coding for
this.protein, transformed cells and microorganisms
Patent: EP 0506574-A 3 30-SEP-1992;
ELF SANOFI
                 62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                         23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg
accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 336;
                                                                                                                                                                                                                           the mature cytokine like protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                            232 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ,5e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  construct"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggacccagaggatgctgaaagcactgtgctctcaaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 147.6;
Pred. No. 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5652123.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .336
/organism="synthetic con
/db_xref="taxon:32630"
-as c 90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 24 from patent US
158494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53.1%;
83.0%;
                                                                                                                                                                                                                                                              A29931.1 GI:1249019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     336 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GT: 2477732
                                                                                                                                                                                                                       Sequence coding for A29931
                                                                                                                                                                                                                                                                                                                                        artificial sequence.
1 (bases 1 to 336)
                                                                                                                                                                                                                                                                                                   synthetic construct synthetic construct
                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158494.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158494
```

```
Unclassified.

1 (bases 1 to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             283. .337
/note="SEQUENCE DE LA REGION 5' NON TRADUITE DU MESSAGER"
338. .762
                                                                                                                                                                                                                                                                                                                               169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                            proteins from prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-DEC-1997
                                                                                                                                                                                                                                                                         DB 10; Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  235 GCCATCGAGAAGACCCAGAGGATGCTGAGCGATTCTGCCCGCACAAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                      41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Legoux,R., Maldonado,P. and Salome,M. Process of extraction of periplasmic protein microorganisms in the presence of arginine Patent: EP 0725140-A 1 07-AUG-1996;
                                                                                                                                                                                                                                                                      52.7%; Score 146.4; DB 1
80.7%; Pred. No. 2.8e-25;
ive 0; Mismatches 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SANOFI SA (FR)
Other publication SK 10696 960904
Other publication SK 260229 960814
Other publication JP 8242879 960924
Other publication FI 960427 960801
Other publication PL 312543 960805
Other publication RR 2729972 960801
Other publication AV 4224496 960808
                                                                                                                                                                                                                  66
Sequence 4 from patent US 5700665
186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
1. .4410
/organism="unidentified"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EP0725140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'db_xref="taxon:32644"
                                                                                                                                                                                                    /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                     9
                                                                                                                                                                                                                 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1 from Patent A52326
                                 GI:3205916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A52326.1 GI:2851987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 4410)
                                                                                                                                                                                                                                                                                                   Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unidentified
unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified
                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                  100 a
                                 186198.1
                                                            Unknown.
                                                                           Unknown.
                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_RNA
                                                                                                                                                                                                                                                                                        Best Local
                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
     DEFINITION
                                                                           ORGANISM
                                                                                                                                                                                                                  BASE COUNT
                                                                                                                  AUTHORS
TITLE
                     ACCESSION
                               VERSION
KEYWORDS
SOURCE
                                                                                                      REFERENCE
                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
A52326
                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unclassified.

1 (bases 1 to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine patent: US 5856142-A 4 05-JAN-1999;
                                                                                                                                                                                                 112 aacatcacccagaatc---aggcatccttctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52 goottococgagocotgtgactocotcoccaaccotcaaggagotcattgaggagotggto 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                 29-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Э;
                                                                                                                   œ
                                                                                      Score 147.6; DB 10; Length 336; Pred. No. 1.5e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52.7%; Score 146.4; DB 9; Length 425;
80.7%; Pred. No. 2.8e-25;
.ive 0; Mismatches 41; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT
                                                                                                                                                                                                                                                                                                               0; Mismatches
                                 71
                                                                                                                                                                                                                                                                                                                                                                                                              AR027065 425 bp DNA
Sequence 4 from patent US 5856142.
AR027065
                 /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="unknown"
116 c 110 a
                               90 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR027065.1 GI:5937905
                                                                                      53.1%;
83.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         425 bp
                                 Q
                                                                                                  Best Local Similarity 83.0
Matches 181; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 52.7
Best Local Similarity 80.7
Matches 184; Conservative
                                 95
                               80 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown.
                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
VERSION
KEYWORDS
     source
                              BASE, COUNT
ORIGIN
```

ORGANISM

SOURCE

AR027065

Q

ò

q ò g ò rocus

REFERENCE AUTHORS

TITLE

BASE COUNT ORIGIN

JOURNAL

FEATURES

55

q ò g à QQ à

169

229 235

RESULT 186198 LOCUS

ä

Gaps

<u>ښ</u>

```
/note="TERMINATEUR DU GENE 10 DU PHAGE T7"
1013. .1253
/note="TERMINATEUR DU PHAGE FD"
1254. .2505
/note="GENE CODANT POUR LE REPRESSEUR DE L'OPERON LACTOSE"
2506. .4410
/note="SEQUENCE DE PBR 327"
1142 c 1096 g 1094 t
                                                                                                                                                                                                                                 <del>.</del>
                                                                                                                                                                                                                                                                                                                   112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                        52 gecteceegageeetgtgaeteeeteeceaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                           /note="SEQUENCE CODANT POUR LE PRECURSEUR DE L'IL-13"
                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                  Score 146.4; DB 9; Length 4410;
Pred. No. 2e-25;
0; Mismatches 41; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Search completed: May 13, 2001, 14:16:12
Job time: 18852 sec
                                                                                                                                                                                                   Query Match 52.7%;
Best Local Similarity 80.7%;
Matches 184; Conservative
                                                                                                                                           1078
              terminator
terminator
                                                        terminator
                                                                                    misc_RNA
                                                                                                               misc_RNA
                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                           Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                        ò
```

Human low adenosin Human adenosine re low adenosin Human adenosine re Human low adenosin Human adenosine re Human low adenosin

Human

Sequence encoding

F21333 1338

721332

inte

Canine mature Canine mature Canine mature Human adenosine re Cytokine N30 0 Gly41-Cytokine cod Asp41-Cytokine cod Sequence encoding Human low adenosin

Human low adenosin Human adenosine re

F21331

Human adenosine re Canine interleukin

Cytokine signal se Cytokine signal se Plasmid pZPC13 enc Human interleukin

Z32227 I74283

r63318

Cellulose binding Cellulose binding Laccase gene. Myc cellophthora the cellophthora the thermophila lac

Mycellophthora the M. thermophila lac Dominant-negative

Human neuronal Human neuronal

ALIGNMENTS

ö

Run

Title:

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine interleukin-13 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                         F21337
A35209
A35215
Z5552
Q28942
Q28941
Q06086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 V48405
Q14288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T74282
T10922
T72106
255566
255559
255550
                                                                                                                                                                                                                                                                                                        Q28943
Q56693
                                                                                                                                                      056692
                                                                                                                                                                                                                                                                 028947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 11; Page 229; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z55554 standard; cDNA; 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                        336
1212
5670
5670
5670
5670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3192
3192
772
1521
2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yang S, Dreitz
                                                                 1270
1282
1282
1282
1290
6952
6952
14978
1297
336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \frac{102}{2460}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3187
                                                                                                                                                                                                                                                                                                                                                                                                                                          166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HESK-) HESKA CORP.
                                          4.8 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4 6688.7 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.9
12.9
12.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.9
12.9
12.4
12.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                  1001.8
1001.8
1001.8
1011.0
0.10.9
4.4.6
4.4.6
3.7.2
3.7.2
3.7.2
3.7.2
3.7.2
3.7.2
3.7.2
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3.7.3
3
                                                                                                                                                                                                                                                                                                        146
142.4
                                                                                                                                                                                                                                                             189.4
147.6
                                          2218
11911
11911
11911
11911
11911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Z55554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sim G,
                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z5554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inte
                                                                                                                                                                        (without alignments)
343.823 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 results predicted by chance to have a to the score of the result being printed, of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mature
                                                                                                                                                                                                                                                                                   278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                          atggcgctctggttgactgt.....gcactgtgctctcaaaagcc
                                                                                                                                               May 13, 2001, 14:28:53 ; Search time 472.02 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canine E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine
Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gcgdata/geneseg/genesegn/NA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn1_8/gcgdata/geneseg/genesegn/NA2000.DAT:*/cgn1_8/gcgdata/geneseg/genesegn/NA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgnl_8/gcgdata/geneseq/geneseqn/NA1985.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1986.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1987.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1989.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1989.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn1_8/gcgdata/geneseq/geneseqn/NA1982.DAT:*
/cgn1_8/gcgdata/geneseq/geneseqn/NA1983.DAT:*
/cgn1_8/gcgdata/geneseq/geneseqn/NA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                          1356552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn1_8/gcgdata/geneseq/geneseqn/nA1995.
/cgn1_8/gcgdata/geneseq/geneseqn/nA1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgnl_8/gcgdata/geneseq/geneseqn/NA1997.
/cgnl_8/gcgdata/geneseq/geneseqn/NA1998.
/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn1_8/gcgdata/geneseq/geneseqn/NA1992
/cgn1_8/gcgdata/geneseq/geneseqn/NA1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .8/gcgdata/geneseq/geneseqn/NA1980.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgn1_8/gcgdata/geneseq/geneseqn/NA1980.
/cgn1_8/gcgdata/geneseq/geneseqn/NA1981.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn1_8/gcgdata/geneseq/geneseqn/NA1994
                      GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                             678276 segs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                           nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255554
255563
255563
255554
255557
255555
255555
255555
255555
255555
255555
255555
255555
255555
255555
255555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       score greater than or equal
and is derived by analysis c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                         US-09-451-527-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N_Geneseq_0401:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     393
1269
1302
1302
272
330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18:-
                                                                                                                                                                                                                                                             278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.
                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                           OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08
08
                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum C
Maximum D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
```

Result No.

4 0 0 7 8 0 0 L

O υ Wonderling RS;

Yang S, Dreitz MJ,

<u>ن</u>

2

```
sequences encoding canine interletekin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
CC IL-4, canine or felline Pit-3 ligand, canine or felline CD40, canine or felline CD40, canine it-5, canine IL-13, felline
CC IL-4, canine or felline Pit-3 ligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
Immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
conclete acids, specific antibodies and inhibitors may be used as
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antiquen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
an also be used to raise antibodies and to screen for
an also be used to raise antibodies and to screen for
an also be used to raise antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcactgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 278; DB 21; Length 278; 100.0%; Pred. No. 2e-66; 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
       Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z55563 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.
Best Local Similarity 100.
Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.555.53
2.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or felline Fit-3 ligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as sources of inhibitory therapeutics (e.g., antisense oligonuclectides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          agocotgigacicocicocoascoticaaggagoticatigaggagotiggicaacaticace 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement
                                                                                                            from cats or dogs, autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 atggcgctctggttgactgtggtcattgctctcactgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agccctgtgactcctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                Sequences 25552-25550 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 27%; DB 21;
100.0%; Pred. No. 2.2e-66;
tive 0; Mismatches 0;
                                                                                                        Nucleic acids encoding immunoregulatory proteins useful for treating or preventing e.g. tumors or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                          Claim ii; Page 238-239; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55564 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting.
                                                     WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                        P-PSDB; Y58223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Sim
Matches 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z55564/
Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

ö

```
Z55557 standard; cDNA; 393 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or felline Flt-3 ligand, canine or felline CD46, canine or felline Flt-3 ligand, canine IL-5, canine IL-13, felline
IL-4, canine Or felline Flt-3 ligand, canine or felline CD40, canine or felline CD54 (CD40 ligand), canine IL-5, canine IL-13, felline
Interferon-alpha (IEN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins any be used as
colony-stimulating factor (GMCSF), and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
conceptors for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense alloquucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z55552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                   Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1i; Page 239; 264pp; English
                                                                                                                                           99WO-US11942
                                                                                                                                                                                       98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and in drug targetting.
                                                                                                                                                                                                                                                                                                                         WPI; 2000-072623/06.
                                                                                                                                                                                                                                     (HESK-) HESKA CORP.
Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                      P-PSDB; Y58223
                                           W09961618-A2
                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                       29-MAY-1998;
                                                                                           02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sednences
                                                                                                                                                                                                                                                                                   Sim G,
```

Length 390; 100.0%; Score 278; DB 21; 100.0%; Pred. No. 2.2e-66; iive 0; Mismatches 0; Query Match 100. Best Local Similarity 100. Matches 278; Conservative

331 9 

> ò 셤

ò q

ö

Gaps

; 0

Indels

270 g ò δ

121

g

ò

241 150

Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine CD14, canine or feline Filt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (SMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection. Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease immunoregulation; tumour; cancer; autoimmune disease; vaccine; antibody; canine; inhibitor; immune Canine interleukin-13 (IL-13) clone 80 cDNA coding region. Wonderling RS; Claim 1i; Page 232-233; 264pp; English. 99WO-US11942, Dreitz MJ, 98US-0087306 and in drug targetting. Interleukin-13; IL-13; WPI; 2000-072623/06. (HESK-) HESKA CORP. Canis familiaris Yang S, P-PSDB; Y58221 WO9961618-A2 28-MAY-1999; 29-MAY-1998; 14-MAR-2000 02-DEC-1999 Sim G, 

Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;

Gaps 9 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg Length 393; Indels 100.0%; Score 278; DB 21; 100.0%; Pred. No. 2.2e-66; 1ive 0; Mismatches 0; Best Local Similarity 100. Matches 278; Conservative Query Match

ő

qq

QY

ò

qq

61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120

δλ pp

RESULT Z55557

334

393 61 333 121

g

δ

agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc  213 ATGTACTGCGCAGCTCTAGAATCTCTGATCATGTCTCCGACTGCAGCGCCATCCAAAGG 154

278

153 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCC 116

Z55561 standard; cDNA; 1269 BP.

9

RESULT 255561

acccagaggatgctgaaagcactgtgctctcaaaagcc

241

Οy 염

atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcatccaaagg

181

δ

qq

qq

ò

cagaatcaggcatccctctgcaacggcaggatgtgtgtggagcgtcaacctgaccgccggc

173 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGTCAACCTGACCGCCGGC

```
allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequences encoding canne interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canne IL-4, canine or feline Fil-3 ligand, canine or feline CD134 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRW-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophlactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                        241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                     241 acccagaggatgctgaaagcactgtgctctcaaaagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 11; Page 233; 264pp; English.
                                                                                                                                                                                 58/c
255558 standard; cDNA; 393 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y58221
                                                                                                                                                                                                                                                                       14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sim G,
                                                                                                                                                                                                                                   255558;
                                 Op
                                                                                                                                                                                                  a
 à
                                                                      ò
```

Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.

Canis familiaris.

Canine interleukin-13 (IL-13) clone 78 cDNA.

14-MAR-2000 (first entry)

Z55561;

```
sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Fit-3 ligand, canine confeline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                     "Canine IL-13 clone 78'
                                                                                                                                                                                                                                                                                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim li; Page 235-236; 264pp; English.
                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                                                                                                                                      98US-0087306.
                                                                                                                                                                                                      /*tag= a
/product= '
                                                                                                                                                                                        57..449
/*tag= .
                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; Y58223.
                                                                                                                                                                                                                                                  W09961618-A2
                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                       29-MAY-1998;
                                                                                                                                                                                                                                                                            02-DEC-1999
```

Query Match 100.0%; Score 278; DB 21; Length 393; Best Local Similarity 100.0%; Pred. No. 2.2e-66; Matches 278; Conservative 0; Mismatches 0; Indels 0;

;

Gaps

ó:

```
ö
the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                   61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                      9
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                     1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                             121 cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                             181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                  Length 1269;
                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                         Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                   100.0%; Score 278; DB 21;
100.0%; Pred. No. 3e-66;
Mismarches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                    241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                  RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                              Best Local Similarity 100.
Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dreitz
                                                                                 in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Z55562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
Z55562/c
ID Z555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
8888888888888
                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
They may be used to treat attoring or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1153 AGCCCTGTGACTCCCTCCCCAACCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1213 ATGGCGCTCTGGTTGACTGTGGTCATTGCTCTCACCTGCCTCGGTGGCCTTGCCTCCCG 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1033 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGCGCCATCCAAAGG 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                               canine or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 cagaatcaggcatccctctgcaacggcaggatggtgtggagggtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                     Sequences 25552-25560 and 25551-25566 represent cDNA and 78 respectively. The invention relates to canine 1L-4, canine or feline Flt-3 ligand, canine or feline Flt-3 ligand, canine or feline CD40, canininterferor-alpa (FN-alpha) and feline granulocyte macrophage interferor-alpa (FN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode timmunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (Particularly cats, dogs, horses and humans).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 278; DB 21; Length 1269; 100.0%; Pred. No. 3e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= a
/product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    973 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCC 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine interleukin-13 (IL-13), clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 acccagaggatgctgaaagcactgtgctctcaaaagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                 1i; Page 237-238; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52..447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
255555
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
```

WO9961618-A2

÷

Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.

/product= "Canine IL-13 clone 80'

/\*tag= a

Location/Qualiflers complement (856..1251)

Key

Canis familiaris.

Canine interleukin-13 (IL-13) clone 80 cDNA complement.

14-MAR-2000 (first entry)

```
sequences encoding canine interleuls (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or felline flt-3 ligand, canine or felline
IL-4, canine CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
Interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The proteins, their associated
cuclet acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophlactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides)
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                             Sequences Z5552-Z55560 and Z55561-Z55566 represent CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                Wonderling RS;
                                                                                                                                                                                                                   Claim 11; Page 229-230; 264pp; English
                                     99WO-US11942.
                                                                                                             Yang S, Dreitz MJ,
                                                             98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and in drug targetting.
                                                                                                                                        WPI; 2000-072623/06
                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                    P-PSDB; Y58221
                                  28-MAY-1999;
                                                            29-MAY-1998;
            02-DEC-1999
                                                                                                                Sim G,
```

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

Claim 11; Page 231-232; 264pp; English

Wonderling RS;

Dreitz MJ,

Yang S,

Sim G,

(HESK-) HESKA CORP.

2000-072623/06.

P-PSDB; Y58221

99WO-US11942. 98US-0087306

28-MAY-1999; 29-MAY-1998;

WO9961618-A2 02-DEC-1999

```
;
0
                                                                                                                                                                                                         240
                                                                              52 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 111
                                                                                                         agocotigitgacicocicocoaacocicaaggagoicatigaggagoiggicaacaicaco 120
                                                                                                                                 171
                                                                                                                                                         cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                  Gaps
                                                        09
                                                                                                                   1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                         atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                ö
        DB 21; Length 1302;
                                Indels
100.0%; Score 278; DB 21; 100.0%; Pred. No. 3e-66; Mismarches 0;
                                                                                                                                                                                                                                                                   241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                     Best Local Similarity 100.
Matches 278; Conservative
          Query Match
                                                                                                                                                                                                                               232
                                                                                                         61
                                                                                                                                                       121
                                                                                                                                                                                                       181
                                                        ò
                                                                             g
                                                                                                      ò
                                                                                                                             qq
                                                                                                                                                     ò
                                                                                                                                                                             pp
                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                            q
```

Z55556 standard; cDNA; 1302

RESULT 255556/c ID 255 XX AC 255

Z55556;

```
Sequences 25552-25560 and 255561-25556 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine of feline filt-3 ilgand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon alpha (IRN alpha) and feline granulocyte macrophage interferon alpha (IRN alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies may be used in detection, modulators of activity, while the antibodies may be used in detection, and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1251 ArGCCCCTCTGGTTGACTGTGGTCATTGCTCACCTGCCTCGGTGGCCTTGCCTCCCCG 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 278; DB 21;
100.0%; Pred. No. 3e-66;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 100.
Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
```

104 9

\_

```
tggccttgcctccccgagccctgtgactccctcccaaccctcaaggagctcattgagga
                              1 tggccttgcctccccgagccctgtgactccctccccaaccctcaaggagctcattgagga
                                                                                                                                                                                                                                                                                                                                     255565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                       RESULT 11
 45
                                                               105
                                                                                                                                                                                                                                                                                        Z55565
                              q
                                                                                            QQ
                                                                                                                                                          g
                                                                                                                                                                                                                        Op
                                                               ò
                                                                                                                             ò
                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequences encoding canine interleuring the sequences encoding canine interleuring to canine and 78 respectively. The invention relates to canine

IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-13, feline

interferon-alpha (IEN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nuclocides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
accines for therapeutic or prophylactic requiation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
alleries, tumours, inflammantion and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
se sources of inhibitory therapeutics (e.g., antisense aligonucleotides).
They proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                             1131 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGGAGCGTCAACCTGACCGCCGGC 1072
                                                                                                                                                                                                                                                                                                                                Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                   Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 272 BP; 64 A; 91 C; 69 G; 48 T; 0 other;
                                                                                            278
                                                                                           Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 228; 264pp; English.
                                                                                                                                                                                                        255553 standard; cDNA; 272 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0087306
                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         s,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang
                                                                                                                                                                                                                                                                                                                                                                                                               W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAY-1998;
                                                                                                                                                                                                                                                                      14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ġ,
                                                                                                                                                                                                                                       25553;
                                                                                                                                                                         RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim
                                                                                                                                                                                        25553
                             ò
                                                       q
                                                                                                                                                                                                      ò
                                                                                                                      q
```

```
Sequences 25552-25560 and 255561-25556 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine or feline Flt-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins: The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide fragments are useful as probes, as amplification primers and nucleotide fragments are useful as probes, as amplification primers and so success of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and in drug targetting.
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                     Canine mature interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1i; Page 239-240; 264pp; English
                                                                                                                                                                                                      ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                    255565 standard; cDNA; 330
                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
```

ö

Gaps

.; 0

84.2%; Score 234; DB 21; Length 272; 100.0%; Pred. No. 1.6e-54; ive 0; Mismatches 0; Indels

Query Match 84.2 Best Local Similarity 100. Matches 234; Conservative

8

```
02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
    8888888
                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences 25552-25560 and 25561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine cD40, canine or felline Flt-3 ligand, canine or felline Flt-3 ligand, canine or felline CD154 (CD40 ligand), canine IL-15, canine IL-13, felline cD154 (CD40 ligand), canine IL-5, canine IL-13, felline colony-stimulating factor (GNSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as captomer or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infections diseases including they may be used to treat autoimmune or infections diseases including callergles, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences
                                                                                                                                                                                                                                                                       240
                                                                                                                                                         61 agccetigtgaetecetececeaaceeteaaggageteattgaggagetggteaacateace 120
                                                                                                                                                                                                                                              cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from cats or dogs, autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                       atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine mature interleukin-13 (IL-13) clone 78 cDNA complement
                                                                Length 330;
                                                                                                             Indels
  0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunoregulatory proteins preventing e.g. tumors or
                                                                                                             ö
                                                                Query Match 78.4%; Score 218; DB 21; Best Local Similarity 100.0%; Pred. No. 3.6e-50; Matches 218; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wonderling RS;
BP; 88 A; 96 C; 82 G; 64 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 11; Page 241; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6/c
255566 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58224
  Sequence 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            z55566;
                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT SECULAR STATE OF   တ္တ
                                                                                                                                                                                              q
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
```

```
ö
can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oflyonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these
                                                                                                                                                                                                                                                                                                                                                                                                                                                      agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330 AGCCCTGTGACTCCCTCCCACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            210 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGCGCCCATCCAAAGG 151
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGGGCGTCAACCTGACCGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                         Length 330;
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canine mature interleukin-13 (IL-13) clone 80 cDNA
                                                                                                                                                                                                                            88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                         78.4%; Score 218; DB 21;
100.0%; Pred. No. 3.6e-50;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1i; Page 233-234; 264pp; English.
                                                                                                                                                                                                                            Sequence 330 BP; 64 A; 82 C; 96 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255559 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
Matches 218; Conservative
                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; Y58222.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
```

σ

```
immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                            and in drug targetting.
     0
```

Sequences encouring cannot interierant to (ii.1) clones on and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CDD4 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleotides specific antibodies and inhibitors may be used as cacines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat auttoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,

Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;

and in drug targetting.

sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to series

Sequences 25552-255560 and 255561-255566 represent cDNA

Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other;

```
.;
0
                                                                                                                Gaps
                                                  61 agecetgigactecetececeaeceteaaggageteattgaggagetggteaacateaee 120
                                                                                                     cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                            9
                                                                           1 agccctgtgactcccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                       atgtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                           .
0
 21; Length 333;
                         Indels
                           .;
0
78.4%; Score 218; DB 21;
100.0%; Pred. No. 3.6e-50;
iive 0; Mismatches 0;
                                                                                                                                                                                                                     241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                         Matches 218; Conservative
             Similarity
 Query Match
             Best Local
                                                                                                    121
                                                                                                                             61
                                                                                                                                                      181
                                                                         g
                                                                                                                       8
                                                                                                                                                                        qq
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                          q
                                                                                                 ò
                                                                                                                                                   ò
```

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                          Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
          Z55560 standard; cDNA; 333 BP
                                (first entry)
                                                                    Canls familiaris.
                                                                              WO9961618-A2
                               14-MAR-2000
                     Z55560;
```

Immunoregulation; tumour; cancer; autoimmune disease; vaccine; Yang S, Dreitz MJ, Wonderling RS; 99WO-US11942 98US-0087306 2000-072623/06. (HESK-) HESKA CORP. P-PSDB; Y58222. 28-MAY-1999; 29-MAY-1998; 02-DEC-1999 Sim G,

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

Claim li; Page 235; 264pp; English.

24-MAR-2000; 2000WO-US08020

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                                                                     61 agecetgtgactecetececaaceeteaaggageteattgaggagetggteaacateace 120
                                                                                                                                                121 cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human low adenosine antisense oligonucleotide related seguence #2901.
                                         Gaps
                                                                                               333 AGCCTGTGAGACCCCCCCCCAACCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                 273 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGTCAACCTGACCGCCGGC
                                         ö
   Length 333;
                                       Indels
78.4%; Score 218; DB 21;
100.0%; Pred. No. 3.6e-50;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                            241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                              153 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCC 116
                                                                                                                                                                                                                                                                                                                                                                                                                          F21334 standard; DNA; 1270 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                  Best Local Similarity 100.
Matches 218; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200062736-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-0CT-2000
     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             F21334;
                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                         F21334
                                                                            δy
                                                                                                            g
                                                                                                                                                δλ
                                                                                                                                                                                 D
                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
99US-0127958
                         (UYEC-) UNIV EAST CAROLINA.
                                                                                             WPI; 2000-679539/66.
06-APR-1999;
                                                                 Nyce JW;
```

Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -

Disclosure; Page 1336; 1592pp; English.

oligonucleotides and compositions (1) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (1) can have respiratory, bronchodilator, antiinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (1) can be used to down regulate the expression and or activity of target polypeptides associated with lung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokine and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, central nervous system (CNS) and peripheral nervous and non-nervous system creeptors, defensines, defensines, growth factors, vasociated proteins. The antisense oligonucleotides may be used in this way to treat disorders and and/or bronchoconstriction) and/or lung inflammation, allery(ies) and/or bronchoconstriction which are associated with a disease or pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragments and antisense oligonucleotides used in the exemplification of the (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), condition selected from pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, respiratory distress syndrome The present invention describes low adenosine (A) content antisense present invention 

Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;

```
Ξ,
                                                                                                                                agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                               225 ggcatgtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcgag 284
                                                                                                                                                               105 ggccctgtgcctccctctacagccctcagggagctcattgaggagctggtcaacatcacc 164
                                                                                                                                                                                              cagaatc---aggcatcctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                           165 cagaaccagaaggctccgctctgcaatggcagcatggtatggagcatcaacctgacagct 224
                                                                                                                                                                                                                                                                ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
 DB 21; Length 1270;
Score 191; DB 21; Length 1 Pred. No. 1e-42; 0; Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                            Query Match 68.7%;
Best Local Similarity 82.8%;
Matches 231; Conservative (
                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                            238
                                                                                                                                61
                                                                                                                                                                                             121
                                                                 ò
                                                                                             a
                                                                                                                               ò
                                                                                                                                                             Db
                                                                                                                                                                                             ò
                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                            ò
```

285

g

Search completed: May 13, 2001, 14:28:54 Job time: 18249 sec

App]

```
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: CDNA
       APPLICANT: Dang, Warr
APPLICANT: de Waal Ma
APPLICANT: Heath, And
APPLICANT: Aversa, Gr
APPLICANT: Briere, Fr
APPLICANT: Banchereau
APPLICANT: Zurawski,
TITLE OF INVENTION: H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
STATE: California
          RESULT 1
US-08-012-543-1
May 13, 2001, 14:20:49 ; Search time 226.02 Seconds (without alignments) 214.758 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Appl:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, A Sequence 1, A Sequence 1, A Sequence 2, A Sequence 2, A Sequence 2, A Sequence 3, A Sequence 3, A Sequence 12, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 11, 1
Sequence 9, Apply Sequence 19, 1
Sequence 18, 1
Sequence 11, Apply 1
                                                                                                                                                                                                                                                                                                                  1 atggcgctctggttgactgt......gcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-371-121-15
US-08-371-121-15
US-08-371-121-24
US-08-906-957-4
US-08-906-957-4
US-08-906-957-1
US-08-371-121-2
US-08-371-121-2
US-08-371-121-2
US-08-371-121-2
US-08-371-121-10
US-08-371-121-10
US-08-371-121-10
US-08-371-121-10
US-08-371-121-10
US-08-371-121-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-939-218A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us-09-005-397-26
                                                                                                                                                                                                                                                                                                                                                                                                                                        302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                       US-09-451-527-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4410
4410
336
447
1212
1212
1212
60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2552233
255223
255223
255223
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
2552
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25523
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
```

```
Appli
Appli
Appli
Appli
Appli
Appli
                                                  Sednence Sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: CALIDITION
CONTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB.1993
US-09-128-450-27
US-08-496-855A-3
US-08-10-2311-9
US-08-10-2311-9
US-08-466-589-9
US-08-466-589-9
US-08-466-589-9
US-09-094-359-3
US-09-094-359-3
US-09-094-359-3
US-09-172-063-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: AVETS, Gregorio
APPLICANT: Briere, Francine
APPLICANT: Briere, Francine
APPLICANT: de Vries, Jan
APPLICANT: Lurawski, Gerard
TITLE OF INVENTION: Human Interleukin-13
CORRESPONDENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/08012543; Patent No. 5596072
GENERAL INFORMATION:
APPLICANT: Culpepper, Janice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ching, Edwin P. REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION
TELEPHONE: 415-452-9196
TELEPRAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS
```

```
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                      COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Simi
Matches 231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-07645-1
                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238
                                                                                                                                                       238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178
                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                  g
                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                          Ω
                                                                                               δ
                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                               ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ï
                                                                                                                                                                                            237
                                                                                                                                                                                                                                                                                                                           agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                       45 ATGGCGCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCGCGCTTTGCCTCCCCA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45 ATGGCGCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCTTGGCGGCTTTGCCTCCCCA 104
                                                                                                              Gaps
                                                                                                                                                                                                                                                   1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                         1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                            178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                              3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ښ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1290;
                                                                                    Length 1290;
                                                                                                              45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                   238 aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                   285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; DB 5;
4.1e-46;
                                                                                  Score 191; DB 1;
Pred. No. 4.1e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 191; DB Pred. No. 4.1e-0; Mismatches
                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68.7%;
82.8%;
                                                                                  68.7%;
82.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 82.8
Matches 231; Conservative
                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: double
              CDS
45..443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                 Query Match
Best Local Similarity
Matches 231; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
             ; NAME/KEY;
; LOCATION:
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TOPOLOGY:
PCT-US93-07645A-1
 FEATURE:
                                                                                                                                                               g
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                               ö
                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                     οχ
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
```

```
61 agccctytgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                       225 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGCGATGCATCGAG 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105 GGCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cagaatc -- agg catcctctg caa cgg cag catgg tg tg gag cgt caa cct gac cgc 177
GGCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           225 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAG 284
                                                                                              165 CAGAACCAGAAGGCTCCGCTCTGCAATGGCATGGTATGGAACGTGACGTGACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165 CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCT
                                                      cagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc
                                                                                                                                                                   ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1290;
                                                                                                                                                                                                                                                                          276
                                                                                                                                                                                                                                                                                                       285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 191; DB 5;
Pred. No. 4.1e-46;
0; Mismatches 45
                                                                                                                                                                                                                                                                             aggacccagaggatgctgaaagcactgtgctctcaaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
CURRENT APPLICATION NUMBER: PCT/US93/07645
APPLICATION NUMBER: 19930818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRICE APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRICE APPLICATION NUMBER: US 08/010977
FILING DATE: 29-AN-1993
PRICE APPLICATION NUMBER: US 08/010977
APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: Macintosh 6.0.5 SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US93-07645-1; Sequence 1; Application PC/TUS9307645; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68.7%;
82.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENOTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
```

```
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
CORRESPONDENCES: 27
CORRESPONDENCE ADDRESS:
                                                                       121 cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                            178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                         57 ATGGCGCTTTTGTTGACCACGCTCATTGCTCTCACTTGCCTTGGCGGCTTTGCCTCCCCA 116
1 atggcgctctggttgactgtggtcattgctctcactgcctcggtggccttgcctcccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: USA
ZIP: 2007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                238 aggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                      297 AAGACCCAGAGGATGCTGAGCGGATTCTGCCGGCACAAG 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
MINTY, Adrian
KRGHAD, Mourad
LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 17, Application US/08371121
; Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 167
REFERENCE/DOCKET NUMBER: 167
TELECOMMUNICATION: TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAPUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFHONE:
TELEFAX: (2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 5
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                    qq
                                                                                                               g
                                                                                                                                                        ò
                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                  δ
                                                                           ò
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Protein having a cytckine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1:;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.1%; Score 189.4; DB 1;
ilarity 82.4%; Pred. No. 1.2e-45;
Conservative 0; Mismatches 46;
                                                                                                                                                                                        MINTY, Adrian
KAGHAD, Mourad
LABIT-LE BOUTEILLER, Christine
MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INPORMATION:
NAME: SAXE, Bernhard.D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                             CAPUT, Daniel
FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                              Sequence 15, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
117..452
                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15..452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simi
Matches 230;
                                                                                                                                                    APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; LOCATION:
US-08-371-121-15
                            US-08-371-121-15
                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Wa
                                                                                                                                 APPLICANT:
```

```
LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Protein having a cytckine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                        55 teceegageeetgtgaeteeetececaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                                                                                                   115 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                             16 TCCCCAGGCCCTGTGCCCTCTACGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            172 accyccyycatytactycycayctctayaatctctyatcaatytctccyactycaycycc
                                                                                                                                                                                                                        'n
                                                                                                                                                                                   Length 384;
                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 ATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FOC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS'
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                      38;
                                                                                                                                                                                53.3%; Score 148.2; DB 1
81.8%; Pred. No. 5.6e-34;
                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LABIT-LE BOUTEILLER, Christine MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEE: FOLEY & LARDNER: 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 24, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                                             DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MINTY, Adrian
KAGHAD, Mourad
               SEQUENCE CHARACTERISTICS:
LENGTH: 384 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAPUT, Daniel
                                                                                                                                                                                                                      Matches 184; Conservative
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 30-NOV-1
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
                                                                                         linear
                                                                                                                                                                                                     Best Local Similarity
                                                                                        ; TOPOLOGY: 1i; MOLECULE TYPE:
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62 gecetytgactecetececaacecteaaggageteattgaggagetggteaacateaece 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122 agaatc---aggcatccctctgcaacggcatcgttgtggagcgtcaacctgaccgccg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ж
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 147.6; DB 1;
Pred. No. 8e-34;
0; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - Fourth Floor
                                                                                                                 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4, Application US/08594469; Patent No. 5700665; GENERAL INFORMATION:
                                                                  NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                        REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5390
TELEFAX: (202) 672-5399
                                                                                                                                                                                                    TELEX: 904136
INFORMATION FOR SEQ ID NO: 24:
                                                                                                                                                                                                                                                                                                                                                                   , MOLECULE TYPE: DNA (genomic)
US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Bacon & Thomas STREET: 625 Slaters Lane -
                                                                                                                                                                                                                                                                                                                                                                                                                                                             53.1%;
83.0%;
APPLICATION NUMBER: FR 91
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                              336 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Virginia COUNTRY: USA
                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE
                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 181;
```

```
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
       REFERENCE/DOCKET NUMBER:
                                                                                                                 LENGTH: 425 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Alexandria
STATE: Virginia
COUNTRY: USA
                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                         TOPOLOGY: li
                                                                                                                                      TYPE: nuclei
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX:
                                                                                                                                                                                                             US-08-906-957-4
                                                                                                                                                                                                                                                                                                       Matches 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                              52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                    112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175 CTGACAGCTGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGT 234
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                            ٠.
ن
                                                                                                                                                                                                                                                                                                         Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229 gocatocaaaggacocagaggatgotgaaagcactgtgototcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        235 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAG 282
                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                   52.7%; Score 146.4; DB 1
80.7%; Pred. No. 1.9e-33;
                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               - Fourth Floor
NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACIERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FR 95 01083 FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 06-AUG-1997
CLASSIFFCATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08906957
Patent No. 5856142
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
                                                                                                                                                                                                                                DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3: Bacon & Thomas 625 Slaters Lane
                                                                                                                                                LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                  Query Match 52.7
Best Local Similarity 80.7
Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS: ADDRESSE: Bacon & T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Virginia
                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                              US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              169
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                               52 gecteceegageeetgtgaeteeeteeecaaeeeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                                                                                          112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115 AACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAAC 174
                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                 Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATCTGCCCGCACAAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1:0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                              Score 146.4; DB 2;
Pred. No. 1.9e-33;
0; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3: Bacon & Thomas
625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: REF/LEGOUX TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEX/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08594469
Patent No. 5700665
                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                            52.7%;
ilarity 80.7%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (703) 683-0500
(703) 683-1080
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
```

Gaps

3;

us-09-451-527-90.rni

```
APPLICANT: KACHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MACAZIN, MARILYD
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                 169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                  52 gecteccegagecetgtgaetecetececaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                   112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                            Length 4410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              572 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAG
                                                                                                                                                                   DB 2;
                                                                                                                                                                   Score 146.4; DB 2
Pred. No. 3.4e-33;
                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                us 07/938,161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: FERRARA, PASCUAL
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, PASCAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-371-121-2; Sequence 2, Application US/08371121
Sequence 2, Application US/08371121
Patent No. 5652123; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FOLEY & LARDNER
                                                                                 DNA (genomic)
                                                                                                                                                              Query Match 52.7%;
Best Local Similarity 80.7%;
Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UMBER: FR 91
08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-MAR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: MINTY, Adrian APPLICANT: KAGHAD, Mourad
  4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA: APPLICATION NUMBER: US
                       TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: F
FILING DATE: 29-MAR-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 20007-5109
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
FILING DATE: 27-MAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                            ; TOPOLOGY: lin;
; MOLECULE TYPE:
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                        ρp
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: LEGOLX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: SALONE, Mac
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                      52 gecteceegageeetgtgaeteeeteeecaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                              112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                     52.7%; Score 146.4; DB 1; Length 4410; 80.7%; Pred. No. 3.4e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  572 GCCATCGAGAAGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAG 619
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                          Pred. No. 3.4e-33;
0; Mismatches 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEE: Bacon & Thomas
: 625 Slaters Lane - Fourth Floor
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: REF/LEGOUX TELECOMMUNICATION: TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
FILING DATE:
APPLICATION NUMBER: FR 95 01083
AFILING DATE: 31-JAN-1995
ATTORNEX/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 1, Application US/08906957
; Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 26,382
                                                                                            TOPOLOGY: linear MOLECULE TYPE: DNA (genomic) US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
IFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FICHTER, Richard E
                                    LENGTH: 4410 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                              Matches 1.84; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                 2 GCCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                               3;
                                                                                                                                                                                                                                                                                                                            Length 336;
                                                                                                                                                                                                                                                                                                                                                           35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                        Score 146; DB 1;
Pred. No. 2.3e-33;
0; Mismatches 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAG 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239 ggacccagaggatgctgaaagcactgtgctctcaaaag 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FERRARA, PASCUAL
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 26, Application US/08371121
Patent No. 5652123
                                                                                 TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                            REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                  MOLECULE TYPE: DNA (genomic)
US-08-371-121-2
                                                                                                                                                                                                                                                                                                                        52.5%;
82.6%;
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                      Query Match 52.5
Best Local Similarity 82.6
Matches 180; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington, D.C.
                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : Patent No. 5652123
: GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

```
229 CTGGCCGCTGGCGGGTTCTGTGTAGCCCTGGATTCCCTGACCAACATCTCCCAAT 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 agcc-----ctgtgactccctccccaacctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109 gicaacaicacccagaaicaggcaiccitcigcaacggcagcaiggigigigagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51.2%; Score 142.4; DB 1; Length 447; 71.4%; Pred. No. 2.7e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGC 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zurawski, Gerard
ENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3: DNAX Research Institute
901 California Avenue
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 16781/383 TELECOMMUNICATION INFORMATION:
                                                    PRILING DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08 JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTONREY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 3, Application US/08012543
; Patent No. 5596072
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aversa, Gregorio
Briere, Francine
Banchereau, Jacques
de Vries, Jan
                                                                                                                                                                                                                                                                                       TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                        27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 71.4
Matches 207; Conservative
                                                                                                                                                                                                                                                                                                                               TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Zurawski
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; MOLECULE TYPE:
US-08-371-121-26
                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
```

```
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                          ;
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 agcc---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                               207;
                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local 3
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 agcc-----ctgtgactccctccccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109 gicaacatcacccagaaicaggcaiccitcigcaacggcagcaiggigigigagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            310 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGC 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71; Indels
                                                                                                                                    SOFTWARE: Patentin Release #1.0, version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
RIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFERMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 142.4; DB 1
Pred. No. 3.4e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh
SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                      NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application PC/TUS9307645A GENERAL INFORMATION: APPLICANT:
                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS: LENGTH: 1212 base pairs TYPE: nucleic acid STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match
Best Local Similarity 71.4%;
Matches 207; Conservative
                                                                                                                                                                                                                                                                                                                                                                                           415-496-1200
                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
70..465
Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                  RY: USA
94304-1104
                                                                                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX:
                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

```
190 AGCAACATCACACAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGAC 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----ctgtgactccctccccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130 GGGCCGGTGCCAAGATCTGTGTCTCTCCCTCTGACCCTTAAGGAGCTTATTGAGGAGCTG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtggggggtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70 ATGCCGCTCTGGGTGACTGCAGTCCTGGCTCTTGCTTGGTGGTGGTCTCGCCGCCCCA 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 142.4; DB 5;
Pred. No. 3.4e-32;
); Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL AND CALLED AND CALLED APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READALE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: MICTOSOFT WORD 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PCT/US93/07645A
                                                                                                                                                                FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51.2%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
```

,

```
; TYPE: nucleic acid
; STRANDEDNESS: double
; TOPOLOGY: linear
PCT-US93-07645-3
```

Ouery Match  S1.2%; Score 142.4; DB 5; Length 1212; Best Local Similarity 71.4%; Pred. No. 3.4e-32; Matches 207; Conservative 0; Mismatches 71; Indels 12; Gaps 1  Oy atgggctctggttggtcattgctctcacctgctctggttgcttcccccg 60
Aato Aato
Oues Bessi Matsi Oy Oy Oy Oy

Search completed: May 13, 2001, 14:20:52 Job time: 17803 sec em\_esthum12:\*
em\_esthum13:\*
em\_esthum14:\*
em\_esthum15:\*
em\_esthum16:\*
em\_esthum16:\*
em\_esthum18:\*
em\_esthum19:\*

em\_esthum21:\*
em\_esthum22:\*
em\_esthum23:\*
em\_esthum24:\*
em\_esthum25:\*

em\_esthum27:\* em\_esthum28:\* em\_estin1:\* em\_estin2:\*

em\_estin4: 'em\_estin5: 'em\_estom1:'

em\_estin3

em\_estom2: em\_estov1: em\_estov2: em\_estp11:

```
May 13, 2001, 11:39:46 ; Search time 5997.24 Seconds (without alignments) 404.959 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                 1 atggcgctctggttgactgt......gcactgtgctctcaaaagcc 278
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9623517 segs, 4368049070 residues
                                                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                       IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est1:*

gb_est2:*

gb_est2:*

gb_est4:*

gb_est5:*

gb_est5:*

gb_est5:*

gb_est7:*

gb_est1:*

gb_est2:*

                                                                                                                                                                                                                                                                       US-09-451-527-90
278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST: *
                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                Run on:
```

em\_estpl9:\*
em\_estpl10:'
em\_estrol:\*
em\_estro2:\*
em\_estro3:\*
em\_estro4:\*
em\_estro6:\*

em\_estpl2:
em\_estpl3:
em\_estpl4:
em\_estpl5:
em\_estpl6:
em\_estpl6:

em\_estpl8:

em\_estrolg:\*
em\_estro20:\*
ep\_estro20:\*
gb\_estro2:\*
gb\_estro3:\*

em\_estrol1: em\_estrol2: em\_estrol3: em\_estrol5: em\_estrol5: em\_estrol6: em\_estrol7: em\_estrol8:

em\_estro7:\*
em\_estro8:\*
em\_estro9:\*
em\_estro10:\*

em\_estro6

```
1117 9b_est48:

1118 9b_est48:

1220 9b_est23:

1221 9b_est53:

1222 9b_est53:

1223 9b_est63:

1224 9b_est63:

1225 9b_est63:

1226 9b_est63:

1227 9b_est63:

1228 9b_est63:

1229 9b_est83:

1239 9b_est83:
```

A1712497 UI-R-AFI-AL300678 TELTAGGON BEF907816 601501924 BEF93226 WSL\_99\_BC AQ001086 CIT-HSP-2 BE53526 WSL\_99\_BC AQ01086 II-BSP-2 BE536034 601062471 A1746678 U106605.Y A1209519 b0e07a1 f BE705147 SCO2\_08F0 AZ201624 SP\_0053A BF039993 BP250023B

AZ305110 CNS 0402X BE907816 BE292210 BE593226 AQ001086 BE357229 BE357229 BE357229 BE357229 BE357229 BE36034 AL909438 AL209519 AL209519 AL209519 AL209519 AL209519 AL209518 AL2

AA880435 vw89f07.r AU075583 AU075583

AZ305110 1M0005P05

Description

Query Match Length

Result No.

190: em_gss_pln1:*  191: em_gss_pln2:*  192: em_gss_rod1:*  193: em_gss_rod2:*  196: em_gss_rod3:*  197: em_gss_rod3:*  198: em_gss_rod3:*  199: em_gss_rod3:*  199: em_gss_rod3:*  199: em_gss_rod3:*  200: em_gss_vrt1:*  201: gb_gss3:*  200: gb_gss3:*  20
--

```
Similarity
                                                                                                                                                                                                                                                                                           | || || || 573 GGGCCGGTG 581
                                                                                                                                                                                                                                                                                 61 agccctgtg 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     discovery
                                                                                                                                                                            169
                                                                                                                                                                                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                   AI712497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                 g
                         BF625277 HVSMEa000
BE032541 131940 MA
BE032543 131942 MA
AU066538 AU066538
BF620464 HVSMEC001
                                                                   BE127683 DEPA1432
BE363650 WS1_64_G1
BE361027 DG1_69_A0
AL207789 Tetraodon
                                                                                                                                                               AQ780112 HS_3169_A
AQ849747 LMAJFV1_1
AQ849972 LMAJFV1_1
BE228410 98AS2556
                                                                                                                                                                                                  AIS98187 tn14f06.x
AI062250 GH01393.5
C97983 C97983 Rice
AI064071 GH04331.5
                                                                                                     BE889888 601512140
BF606532 273595 MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΙŢ
                                                                                                                               BE216356 HV_CED001
BF685554 602140603
                                                                                                                                                AL522415 AL522415
BG112663 602282217
                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 581)
Dunn, D., Aoyadi, A., Barber, M., Beacorn, T., Duval, B., Hamil, C., M., Rose, M., Rose, R., Stokes, R., Tingey, A., von Niederhausern, A. and Wright, D., Weiss, R.
                                                                                                                                                                                                                                                                                 AZJUSIIO 581 bp DNA GSS 29-SEP-2000 1M0005POSR Mouse 10kb plasmid UUGCIM library Mus musculus genomic clone UUGCIM0005POS R, DNA sequence.
                                                                                                                      AV387571 AV387571
BE216356 HV_CED00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLC,
                                                                                                                                                                                                                                                                                                                                                                                                                            Mouse whole genome scaffolding with paired end reads from 10kb plasmid inserts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ε.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s. 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="mouse 10kb plasmid UUGClM library"/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rm. 308, Biomedical Polymers Research Bldg., 20
84112, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plate: 0005 row: P column: 05
Seg primer: CACACAGGAAACAGCTATGACC
Class: plasmid ends
                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (2000)
Contact: Robert B. Weiss
University of Utah Genome Center
University of Utah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 581.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:10090"
/clone="UUGC1M0005P05"
                                                                             BE363650
                                                                                              CNS02PBO
                                                                                                      BE889888
                                                                                                               BF606532
                                                                                                                               BE216356
                                                                                                                                                                                           BE228410
                                                                     BE127683
                                                                                                                                                  AL522415
                                                                                                                                                         BG112663
                                                                                                                                                                  AQ780112
                                                                                                                                                                                 AQ849972
                  BF143984
                                                            BF620464
                                                                                                                                         BF685554
                                                                                                                                                                          AQ849747
                                                                                                                       AV387571
                                                                                                                                                                                                             AI062250
                                                                                                                                                                                                    AI598187
                                                                                                                                                                                                                            AI064071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                 AZ305110.1 GI:10341800
                          151
161
161
106
150
                                                                                                                               164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 801 585 5606
Fax: 801 585 7177
Email: ddunn@genet
                                                                                    .581
                                                                                                                                                                                                                                                                                                                                                  house mouse.
Mus musculus
4 พ.พ.พ.พ.ผ.ผ.ผ.ผ.ผ.ผ.ผ.ศ.ศ.ศ. 00000 00 00 00 00
source
                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                RESULT 3
AZ305110
                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
```

```
(http://www.jax.org/resources/documents/dnares/). The DNA was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with T4 DNA polymerase and T4 polynucleotide kinase. Adaptor oligonucleotides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pWDA2 (gil4732114|gblAF129072.1), a copy number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: msoares@blue.weeg.ulowa.edu
Oligo-dT track not found, Not I site shown in beginning of sequence
is likely internal to the message. cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               adaptored vector DNA, and transformed into chemically competent E. coll XL10-Gold (Stratagene) cells and selected for ampicallin resistance. The coll of the collocation of the collocat
/lab_host="E. Coli strain XLIO-Gold, T1-resistant, F-"
/note="weetcr: PWD42Inv; Purified genomic DNA from M.
musculus C57BL/63 (male) was obtained from the Jackson
Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 463) Bonaldo,M.F., Lennon,G. and Soares,M.B. Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Res. 6 (9), 791-806 (1996)
97044477
97044477
Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
University of Iowa
151 Bockstein Medical Research Building Iowa City, IA 52242, USA
781: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AI712497 463 bp mRNA EST 08-JUN-1999 UI-R-AFI-aap-b-12-0-UI.sl UI-R-AFI Rattus norvegicus cDNA clone UI-R-AFI-aap-b-12-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 43.4; DB 219; Length 581;
Pred. No. 0.14;
0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Rattus norvegicus"
/strain="Sprague-Dawley"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Research Genetics (www.resgen.com)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15.6%; 76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI712497
AI712497.1 GI:5016297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Norway rat.
Rattus norvegicus
```

```
human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                  Ŋ
                                                                                                                                                                                 nucleotides present between the Not I site and the object of track. The library was constructed as described by Bonaldo, Lennon and Soares, Genome Research 6: 791-806 , 1996. Tissue provided by Jim Lin, Department of Biology, TAG_LIB-U1-R-AT TAG_LIB-U1-R-AT TAG_LIB-U1-R-AT Canal at 15 dpc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetracdon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetracdon.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                        /lab_host="PHIOE (Life Technologies)"
/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
polylinker; Site_1: Not I; Site_2: Eco RI; The UI-R-AFI
library is a normalized library constructed from 15 dpc
rat atrioventricular (AN) canal. The tag is a string of
nucleotides present between the Not I site and the
oligo-dT track. The library was constructed as describe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tetraodon nigroviridis
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Eurypterygii; Ctenosquamata; Acanthomorpha; Euacanthomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 994)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C.,
Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F.,
Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human gene number estimate provided by genome wide analysis using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 994)
Rocat-Crollius,H., Jaillon,O., Dasilva,C., Fizames,C., Fisher,C.,
Bouneau,L., Billault,A., Quetier,F., Saurin,W., Bernot,A. and
Welssenbach,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tetraodon nigroviridis genome survey sequence T7 end of clone 125F09 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83 ccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgca 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315 CCCTTAGTGTTCACTCTGATGATCATCTGGTCCTCAGAACACAAATATTGGCCCTGGGGCTACA 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Holacanthopterygii; Acanthopterygii; Percomorpha;
Tetraodontiformes; Tetraodontoidei; Tetraodontidae; Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 40; DB 24;
Pred. No. 1.1;
0; Mismatches 50
                 one="UI-R-AF1-aap-b-12-0-UI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                      144
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS; genome survey sequence.
Tetraodon nigroviridis.
                                                                                                                                                                                                                                                                                                                                                   92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                       /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                TAG_SEQ-GAAGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL300678.
AL300678.1 GI:8177652
                                                                                                                                                                                                                                                                                                                                                                                                                                     14.4%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  994 bb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 994)
                                                                                                                                                                                                                                                                                                                                                        O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNS040ZX
                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
CNS040ZX/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

FEATURES

```
/tissue_type="epithelioid carcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: pancreas; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.1 kb. Library constructed by Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1. .994
//crganism="Tetraodon nigroviridis"
//db.xref="taxon:99883"
/clone="125F09"
/clone=lib="G"
/rone=lib="G"
/note="Genoscope sequence ID : COBG125CC05LP1-end : T7"
a 295 c 325 g 174 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE907816 576 bp mRNA EST 20-OCT-2000 601501924F1 NIH_MGC_70 Homo sapiens cDNA clone IMAGE:3903965 5', BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74 cctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcat 133
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                  244 TGGCTGTGTCTCTTCTTCCATCGGGACAACAAGGCCTTCGCTGCCCTCCTCACGCCGACC 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 576)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                     14 tgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtgactc 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tissue Procurement: ATCC
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
Plate: LLAM9708 zow: o column: 06
High quality sequence stop: 571:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                  DB 231; Length 994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 141; Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 ccctctgcaacggcagcatgtggagcgtcaacctgaccgccggcat 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 TCTGCTGTGATGGCAGCCTTGTCAAGATCACCGAGCAGAGAAT 76
                                                                                                                                                                                                                                                                                                                82; Indels
                                                                                                                                                                                                                                                             Score 37.8; DE Pred. No. 5.3; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 36.8; DI
Pred. No. 8.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="IMAGE:3903965"
/clone_lib="NIH_MGC_70"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   147 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE907816.1 GI:10401759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Technologies.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.2%;
48.1%;
                                                                                                                                                                                                                                                             Query Match 13.6%;
Best Local Similarity 51.5%;
Matches 87; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
```

S

ö

```
BE593226.1 GI:9848299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mmpratt@uga.edu
                                                                   Query Match 13.2%;
Best Local Similarity 50.9%;
Matches 87; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
Les 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE593226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                          à
                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                            .
Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clssuc_rype_rica.
//dev_stage="Premeiotic anthers"
//dev_stage="Premeiotic anthers"
//lab_host="E. coli SOLR"
//note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_l: EcoRI; Site_2: XhoI; Plants were grown in a growth chamber at the University of California, Davis (Akhunov).
Premeiotic anthers were harvested, total RNA and poly(A)
RNA were prepared, from each tissue and then pooled, a cDNA library was made, and the cDNA clones were in vivo excised to give pluescript phagemids in the TJ Close lab (Akhunov, Chin, Choi, Close, Fenton, Kianian, Otto, Simons, Zhang) at the University of California, Riverside.
plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Akhunov, E., Anderson, O.D., Chao, S., Chin, A., Chol, D.W., Close, T.J., Fenton, R.D., Han, P.S., Hsia, C.C., Kang, Y., Kianian, P., Lazo, G.R., Millet, R., Otto, C., Rausch, C.J., Seaton, C.L., Simons, K., Tong, J.C. and Zhang, D.

The structure and function of the expressed portion of the wheat genomes - Anther CDNA library from Aegilops speltoides (Unpublished (2000) Contact: Olin Anderson US Department of Agriculture, Agriculture Research Service, Pacific
    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aegilops speltoides
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF292210 329 bp mRNA EST 17-NOV-2000 WHE2208_A08_B16ZS Aegilops speltoides anther cDNA library Aegilops speltoides cDNA clone WHE2208_A08_B16, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Aegilops speltoides"
/cultivar="F2 from 2-12-4-8-1-1-1-(1) x P136909-12-811-(1
                                                                       ttgaggagctggtcaacatcacccagaatcaggcatccttctgcaacggcagcatggtgt 157
                                                                                                                                                                                                                    158 ggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtct 217
                                                                                                                                                                                                                                                            344 CCAAAGCGCGCCTCCGTTTCTGCCAGTGTTGTTCTTCCAAGGCAGCTTTCATGCTCAGCT 403
    Gaps
                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:4573"
/clone="wH82208_A08_B16"
/clone_lib="Aegilops speltoides anther cDNA library"
/tissue_type="Anther"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence and low 20
                                              gootcogtggcottgcctccccgagccctgtgactccctccccaaccctcaaggagctca
                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence have been trimmed to remove vector quality sequence with phred score less than Seq primer: Stratagene SK primer. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595773
Mismatches 112;
                                                                                                                                                                                                                                                                                                       218 ccgactgcagcgccatccaaaggacccagaggatgc 253
                                                                                                                                                                                                                                                                                                                                                 404 GTGACTGCAGCTCAATCTCAAGACCCTGAAGGGTGC 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: oandersn@pw.usda.gov
.
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BF292210.1 GI:11223274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Aegilops speltoides.
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aegilops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                          38
                                                                                                                               98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                      BF292210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                q
                                                                                                                               õ
                                                                                                                                                                       qq
                                                                                                                                                                                                                                                   q
                                          ò
                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                             q
```

```
1. 277
/organism="Sorghum bicolor"
/db_xref="Laxon:4558"
/db_tref="Laxon:4558"
/clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld; Vector: Lambda Zap; Site_1: Xho!;
Site_2: ECORI; The library was made from poly-A RNA in the cloning vector lambda 2AP II. Clones to be sequenced were prepared by mass excision."

a 81 c 78 g 71 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophyta,
Magnoliophyta, Liliopsida, Poales, Poaceae, PACC clade, Panicoideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Andropogoneae, Sorghum.
1 (bases 1 to 277)
Cordonnier-Pratt,M.-M., Gingle,A., Marsala,C., Sudman,M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE593226 277 bp mRNA EST 18-AUG-2000 WS1_99_B03.g1_A002 Water-stressed 1 (WS1) Sorghum_bicolor cDNA, mRNA sequence.
                                                                                                                                                                                          80 caaccetcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatccetet 139
                                                                                                                                                                                                                          158 TCGCCATCTCTCTCCCCTTCGTCCAGAAGATCATCGCCGAGATTTTCGGGACCTACTTCC 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84 octcaaggagotcattgaggagotggtcaacatcacccagaatcaggcatccttgcaa 143
                                                 Gaps
                                                                                           Rm. 2502, Athens, GA 30602-7271,
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ó
Length 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 277;
                                                                                                                                                                                                                                                                                   An EST database from Sorghum: water-stressed plants
                                            84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 137;
  DB 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13.1%; Score 36.4; DE 53.5%; Pred. No. 9.4;
Score 36.6; D
Pred. No. 8.7;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seq primer: PolyTMix
High quality sequence start: 5
High quality sequence stop: 246
PoLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequences have been trimmed below Phred quality 16. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The University of Georgia Plant Sciences Building, F
Tel: 706 542 1860
Fax: 706 542 1805
```

ö

```
Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                              BE357229
BE357229.1
                                                                                                                  sequence.
                                                                                                                                                                           sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
BE498968
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                 DEFINITION
                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      369
                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                         RESULT
BE357229
                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 411)
Adama, M.D., Rounsley, S.D., Zhao, S., Field, C.E., Bass, S., Linher, K., Golden, K., Berry, K., Granger, D., Suh, E., Wible, C., Shizuya, H., Simon, M. and Venter, J.C.
Use of a random BAC End Sequence Database for Sequence-Ready Map Bullding (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                      AQ001086 411 bp DNA GSS 26-JUN-1998
CIT-HSP-2288N10.TR CIT-HSP Homo sapiens genomic clone 2288N10, DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: mdadams@tigr.org
Clones are available from Research Genetics (info@resgen.com). BAC
end search page:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              http://www.tigr.org/tdb/humgen/bac_end_search/bac_end_search.html
Seg primer: M13 Reverse
Class: BAC ends.
                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144 cggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 203
                                       82 ceacececcearreercaaceccaecrarecececcaaceccaaceccarerare 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89 aggageteattgaggagetggteaacateaceeagaateaggeateettgeaaeggea 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cloud_in______/
/sex="Male"
/cell_type="Sperm"
/note="Vector: pBeloBAC11; Site_1: HindIII; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           227 CCCAGACTGGGGTCCTGGTGGGGCTGGGGCCCACATGGGGTCCTGAAAGGGCAGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcatggtgtggagcgtcaacctgaccgccggcatgtactgcgacagctctagaatctctga
                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Mark Adams
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 36.4; 1
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="GDB:7150045"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
/clone="2288N10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="CIT-HSP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      209 tcaatgtctccgactgcagcgccatc 234
                                                                      204 tctgatcaatgtctccgactgc 225
                                                                                     GI:3028525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.1%;
llarity 48.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100 c
                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                               AQ001086.1
                                                                                                                                                                                                      sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                       AQ001086/c
Locus
                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149
                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                     g
                                                                                              g
                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="bark Grown 1 (DG1)"
/note="Corgan: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhoI; Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
1 160 c 112 t
                                                                                                                           BE357229 537 bp mRNA EST '20-JUL-2000 DG1_147_B02.91_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE498968 230 bp mRNA EST 04-AUG-2000 WHE0969_G06_N112S Wheat pre-anthesis spike cDNA library Triticum estivum cDNA clone WHE0969_G06_N11, mRNA sequence.
BE498968 G1:9697585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249 CCCCATGGAGAGGCTCGGGGGAGCCCGGCGATCGCGCGGTGGTCGGGTTCCTCTGCAC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ceteaaggageteattgaggagetggteaacateaeeeagaateaggeateeetetgeaa 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144 cggcagcatggtgggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309 ceacecceceagregercaaceccagercarcececcaacegecearegerare 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                           Andropogoneae; Sorghum.
1 (bases 1 to 537)
Cordonnier-Pratt,M.-M., Gingle,A., Marsala,C., Sudman,M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An EST database from Sorghum: dark-grown seedlings Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602
Tel: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 36.4; DE
Pred. No. 11;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq primer: PolyTMix
High quality sequence start: 31
High quality sequence stop: 514
POLYANO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: mmpratt@uga.edu
Sequences have been trimmed
below Phred quality 16. The
1s 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGATCTTAGCTTCTACAGC 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tctgatcaatgtctccgactgc 225
                                                                                                                                                                                                                                 GI:9298786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
```

```
sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                168 cc 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J.
                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
AI909438/C
    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      927
                                                            REFERENCE
AUTHORS
                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                    Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific
West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
                                                          Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophyta,
Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Vector: Lambda Uni-ZAP XR, excised phagemid; Site_1: EcoRI; Site_2: XhoI; Plants were grown in the greenhouse. Whole spike with awns trimmed, white, green and yellow anther were collected and total RNA, and poly(A) RNA were prepared, a cDNA library was made, and the cDNA clones were in vivo excised to give pBluescript phagemids in the TJ close lab (Choi, Close, Fenton) at the University of California, Riverside. Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                              Anderson, O. D., Chao, S., Choi, D.W., Close, T.J., Fenton, R.D., Han P.S., Hala, C.C., Kang, Y., Lazo, G.R., Miller, R., Rausch, C.J., Seaton, C.L. and Tong, J.C.
The structure and function of the expressed portion of the wheat genomes - Pre-anthesis spike cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE536034 1070 bp mRNA EST 09-AUG-2000 601062471F1 NIH_MGC_10 Homo sapiens CDNA clone IMAGE:3448912 5', mRNA sequence.
BE536034 GI:9764679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 TGGCCATCTCTCCCCTTCGTCCAGAAGATCATCGCGAAGATTTTCGGGACCTACTTCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80 caaccetcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatccetet 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence have been trimmed to remove vector sequence and low quality sequence with phred score less than 20 Seq primer: Stratagene SK primer.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Wheat pre-anthesis spike cDNA library"
/tIssue_type="Spike before anthesis"
/dev_stage="Adult_plant"
/lab_host="E. coli SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 35.6; DB 167; Length 230;
Pred. No. 15;
0; Mismatches 84; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 gcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Triticum aestivum"
/cultivar="Chinese Spring"
/db_xref="taxon:4565"
/clone="WHE0969_G06_N11"
                                                                                                                                                                                                                                                                                                                                                                        Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12.8%;
                                                                                                                    (bases 1 to 230)
                                                                                                                                                                                                                                      Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 12.8
Best Local Similarity 50.6
Matches 86; Conservative
                                      Triticum aestivum
                                                                                                                                                                                                                                                                                                                                    Tel: 5105595773
Fax: 5105595818
                      bread wheat.
                                                                                                  rriticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE536034/c
KEYWORDS .
                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pp
```

```
1 (bases 1 to 177)
Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagal, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cllome_median_
/cell_line="MGG16"
/lab_host="MGG16"
/note="Organ: cervix; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.5 kb. Library prepared by Life
Homo saplens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1070;
NIH-WGC http://mgc.noi.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                    CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Incyte Genomics, Inc.
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48 cettgeeteecegageeetgtgaeteeeteeceaaceeteaaggageteattgaggaget 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1047 CCGCGCCCCCCCCCCGCGTATAAAGGCCCCTCTTAAACAGCGGGGGCCCATAGAGGTCCC 988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                108 ggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A1909438 177 bp mRNA EST 30-MAR-200
IL-88T208-080499-007 BT208 Homo sapiens CDNA, mRNA sequence.
A1909438.1 GI:6500118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 136; Length 1070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plate: LLAM8424 row: n column: 17
High quality sequence start: 3
High quality sequence stop: 5.
Location/Qualifiers
1. 1070
/organisme"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.8%; Score 35.6; 55.7%; Pred. No. 21;
                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
Email: Robert_Strausbergenih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9606"
/clone="IMAGE:3448912"
/clone_lib="NIH_MGC_10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68; Conservative
```

Mon

```
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI209519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                 /u.i.' / Organism="Homo sapiens"
/db_xref="taxon:9606"
/clooe_lib="BT208"
/sex="female"
/dev_stage="Adult"
/dev_stage="Adult"
/note="Organ: breast; Vector: puc18; Site_l: SmaI; Site_2: SmaI, A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196
/716 - Ludwig Institute for Cancer Research) profiles
into the pUC 18 vector. Reverse transcription of tissue mRNA amplification were performed under low stringency conditions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AI746678 570 bp mRNA EST 22-JUN-1999 u106bb5.yl Sugano mouse kidhey mkia Mus musculus cDNA clone IMAGE:206233 5' similar to gb:D00015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); gb:M13685 Mouse prion protein (MOUSE);, mRNA sequence.
                                                                                                                                                            Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
Project./www.ludwig.org.br/seq/gethtml.pl?tl=IL&t2=IL-BT208-007.html
&t3-080499&t4=1)
Seq primer: puc 18 forward.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptoe, M., Thelsing, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Glibons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Materston, R. and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                        Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 gaggagetggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgg 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40 ctcggtggccttgcctcccgagccctgtgactccctccccaacctcaaggagctcatt 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106 CACGACTGCGTCAATATCACCATCAAGCAGCACACAGTCACCACCACCACCAACAAGGGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 177;
    Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (1999)
Contact: Marra M/WashU-NCI Mouse EST Project 1999
Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.7%; Score 35.2; 152.8%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160 agcgtcaacctgaccgccggcatg 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTTCACCGAGACCGATGTGAAG 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AI746678.1 GI:5124942
                                                                                                                                                Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best_Local Sin
Matches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
AI746678
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                   FEATURES
                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          b0e07al.fl Aspergillus nidulans 24hr asexual developmental and vegetative cDNA lambda zap library Aspergillus nidulans cDNA clone b0e07al 3', mRNA sequence.
             Tel: 314 286 1800
Fax: 314 286 1810
Fax: 314 286 1810
Email: mousesextwatson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for fufther information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               constructed by Dr. Sumio Sugano (University of Tokyo Institute of Medical Science). Custom primers for sequencing: 5' end primer CTTCTGCTCTAAAAGCTGCG and 3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           323 GCCATGAGCAGGCCCATGATCCAAGTGTACTACAGGCCAGTGGATCAGTACAGCAACCAG 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Martin, W., Aramayo, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         geteteacetgeeteggggeettgeetecegageeetgtgaeteeeteeeaaceete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88 aaggageteattgaggagetggteaacateaeceagaateaggeatectgeaaegge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An Aspergillus nidulans EST Database
Unpublished (1998)
Contact: Bruca A. Roe, University of Oklahoma, broe@ou.edu
Department of Chemistry and Blochemistry
63108,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148 agcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctc 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          others
 Louis, MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                   /db_xref="taxon:10090"
/clone="IMAGE:2065233"
/clone_lib="Sugano mouse kidney mkia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 24;
St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lai, H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer CGACCTGCAGCTCGAGCACA."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eurotiales; Trichocomaceae; Emericella
1 (bases 1 to 359)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
Park Parkway, Box 8501,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 35.2; |
Pred. No. 24;
                                                                                                MGT:994421
Seq primer: custom primer used
High quality sequence stop: 283.
Localion/Qualifiers
                                                                                                                                                                                                 /organism="Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hausner, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           190 g
                                                                                                                                                                                                                                                                                                             /dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                  /strain="C57BL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                            /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.7%;
50.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AI209519.1 GI:3771461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aspergillus nidulans.
Aspergillus nidulans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   359 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kupfer, D., Gray, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Prade, R. and Roe, B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 85; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A1209519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140
                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
```

Gaps

ö

source

FEATURES

BASE COUNT ORIGIN

à g ð qq ò 셤 ò g

```
/organism="Strongylocentrotus purpuratus"
/db_xref="taxon:7668"
/db_organ:7668"
/clone_lib="Strongylocentrotus purpuratus, purple sea
urchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC Clones in E-Coli
                                                                                                                                                                                     /dev_stage="seedling three-leaf stage"
/note="Vector: Bluescript SK+/XhoI-EcoRI; Site_1: Eco RI;
Site_2: Xho I; Sampled three-leaf seedlings treated for
one week at 2oc, 12 hrs light/day. Library made with
Stratagene UNIZAP XR Kit/(not packaged). cDNA is directly
ligated into SK+/XhoI-EcoRI, then electroporated into
TOP10 cells (Invitrogen)."
                                                                                    /clone="Sc02_08f05"
/clone_lib="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seedl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 965)
Cameron, R.D. Mahairas, G., Rast, J.P., Martinez, P., Biondi, T.R.,
Swattzell, S., Wallace, J.C., Poustka, A.J., Livingston, B.T., Wray,
G.A., Ettensohn, C.A., Lehrach, H., Britten, R.J., Davidson, E.H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AZ201624 965 bp DNA GSS 31-AUG-2000 SP-003-AZ_BL_SPE6 Strongylocentrotus purpuratus, purple sea urchin, sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=53 Col=24 Row=C, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          207 AACAGCAACAARAACCACGCGTCCGCCGACTCCGGCGACCAGTGGATGAAGAAGAHCATG 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52 gecteccegagecetgtgaeteceteceaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112 aacatcacccagaatcaggcatcctttgcaacggcagcatggtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A sea urchin genome project: Sequence scan, virtual map, and additional resources
Proc. Natl. Acad. Sci. U. S. A. 97 (17), 9514-9518 (2000)
20402566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strongylocentrotus purpuratus
Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinoidea; Euechinoidea; Echinacea; Echinoida;
Strongylocentrotidae; Strongylocentrotus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 507;
                                                                                                                                                                                                                                                                                                                                                                                   10 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 138;
        /organism="Secale cereale"
/cultivar="Puma (winter rye)"
/db_xref="taxon:4550"
                                                                                                                                                                                                                                                                                                                                                                           65 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 34.8; DE Pred. No. 29; 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Cameron, RA, Davidson, EH,
Division of Biology 156-29
                                                                                                                                                                        crown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              California Institute of Technology
Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Strongylocentrotus purpuratus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Class: BAC ends
High quality sequence stop: 9
Location/Qualifiers
                                                                                                                                                                     /tissue_type="leaf,
                                                                                                                                                                                                                                                                                                                                                                              148 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: acameron@caltech.edu
Plate: 53 row: C column: 2
Seq primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AZ201624.1 GI:8396538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cn 12.5%;
l Similarity 53.3%;
64; Conservative 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: (626) 395-8421
Fax: (626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                 169 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AZ201624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
AZ201624/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="%spergillus nidulans 24hr asexual
developmental and vegetative cDNA lambda zap library"
/tissue_type="vegetative mycelia, asexual structures"
/note="vector: pBlueScript Sr.; Site_1: EcoRI; Site_2:
%hol; 5' end of cDNA cloned into EcoRI site of pBluescript 3' end of cDNA cloned into xhol site of pBluescript"

113 c 89 g 77 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Secale cereale
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Singh,J.A., Piche,C., Couroux,P., De Moors,A., Harris,L.J., Hattori,J.I., Ouellet,T., Robert,L.S., Sprott,D. and Tinker,N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
Advanced Center for Genome Technology, University of Oklahoma 620 Parrington Oval, Norman, OK 73019, USA Tel: 405 325 4912 Fas: 405 325 7762 Emai: broe@ou.edu We anticipate the future release of the cDNA clones to the Fungal Genetics Stock Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE705147 507 bp mRNA EST 12-SEP-2000 SC02_08f05_A SC02_AAFC_ECORC_cold_stressed_winter_rye_seedlings Secale cereale cDNA clone Sc02_08f05, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Agriculture and Agri-food Canada 960 Carling Avenue, Bldg. 20, Ottawa, Ontario, KlA OC6, Canada Tel: (613) 759-1662
Fax: (613) 759-1701
Email: singlatem.agr.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81 aacceteaaggageteattgaggagetggteaacateacecagaateaggeatecetetg 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             128 GGTCGAGCAGCCCATCCACCTCGGAGGCATCGCTGGATTCGGATCTCGGCAATCCATGCCT 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188 CACCCTCCGGGCTCTCGTTGATGATTTGGCCTTGTCACTGAGGACCTCGTTGCCCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141 caacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         248 TCACAGTICCAGAGACGGAGAGAGCACGICTGAAGCAGATITGACGGACTCGACGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35, DB 17; Length 35
Pred. No. 24;
0; Mismatches 110; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Singh,J.A.
Eastern Cereal and Oilseed Research Centre
                                                                                                                                                                                                                                                                                               /organism="Aspergillus nidulans"
/strain="FGSC A26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        308 CAACGGCTCGCCGCACCAACCTCAGTGCC 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201 atctctgatcaatgtctccgactgcagcgcc 231
                                                                                                                                                                                                                High quality sequence stop: 251
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:5072"
/clone="b0e07a1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE705147
BE705147.1 GI:10093412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 12.6%;
Best Local Similarity 47.9%;
Matches 101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 507)
                                                                                                                                                                                           Seq primer: M13-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Secale.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST.
```

DEFINITION

ACCESSION KEYWORDS SOURCE

RESULT 14

BE705147

ORGANISM

TITLE JOURNAL

COMMENT

REFERENCE AUTHORS source

FEATURES

DAILOB"

BASE COUNT 304 a 178 c 184 g 297 t 2 others

ORIGIN

Query Match

12.4%; Score 34.6; DB 217; Length 965;

Best Local Similarity 50.3%; Pred. No. 39;

Matches 85; Conservative 0; Mismatches 84; Indels 0; Gaps 0;

0y 0y

Q

Search completed: May 13, 2001, 11:39:51 Job time: 16466 sec em\_ph:\* em\_pl:\* em\_ro:\* em\_sts:\*

em\_pat:

em\_ov:\*

gb\_sts2:\* gb\_sts3:\* gb\_sy:\*

\*:un\_q£

Sedneuce:

Run on:

Searched:

gb\_vi2:

jb\_sts1:

em\_un:\* em\_vi:\*

em\_sy:\*

gb\_htg6:' gb\_htg7:' gb\_htg8:'

3b\_htg4:

```
æ
                                                                          May 13, 2001, 14:16:12 ; Search time 9342.78 Seconds (without alignments). 2055.246 Million cell updates/sec
                                                                                                                                  2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                         IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_fun:*
em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
em_htg_hum1:*
em_htg_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_inv1:*
em_htg_inv2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htg_hum6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_htg_hum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_other:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_htg_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_htg_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htg_hum7:*
                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                9b_ba2:*
9b_iba3:*
9b_in1:*
9b_in3:*
9b_on:*
9b_on:*
9b_ox:*
9b_ox:*
9b_ox:*
9b_ox:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_pl2: *
gb_pl3: *
gb_pl4: *
em_ba1: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_in:*
em_om:*
em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_hum5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_hum2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_hume
                                                                                                                                                                                                                                                                                                                                                                                                  gb_ba1:*
                                                                                                                                                                                                                                                                                                                                                                                   GenEmbl:*
                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                     Database :
```

gb\_htg22:\* gb\_htg23:\* gb\_pr8:\* gb\_pr9:\* gb\_ro1:\* gb\_ro2:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

v
Œ
۰
Ω
4
2
Σ
_

Description	AF244915 Canis fam	AF276990 Canis fam	AF276990 Canis fam	L06801 Homo sapien	X69079 H.sapiens i	I34548 Sequence 1	A29948 Coding segu	I58488 Sequence 15	AF043334 Homo sapi	AJ132441 Bos tauru	AP072807 Bos talirii
. QI	AF244915	AF276990	AF276990	HUMIL13A	HSNC30	I34548	9 A29948	I58488	AF043334	BTA132441	AF072807
DB	7	78	78	63	92	10	6	10	88	7	7
Query e Match Length DB ID	100.0 1302	213343	213343	1270	1282	1290	1297	1297	417	3520	543
Query	100.0	68.4	31.4	29.0	29.0	29.0	28.9	28.9	19.3	17.8	5 91
Score	1302						376.4				
Result No.	-	c 0	ဇ	4	S	9	7	80	6	10	-

```
qq
                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                        158494 Sequence 24
A29930 Sequence 24
A29930 Sequence 2
IS8481 Sequence 2
IS8495 Sequence 2
IA2079 Homo sapien
AC004039 Homo sapien
L13029 Human inter
                                                                                                                                                                                                                                                                                                                                                                                                                  U10307 Human inter
AC074127 Homo sapien
AC074127 Homo sapi
AC065742 Mus muscu
AC020886 Mus muscu
L13028 Mouse inter
AL359583 Homo sapi
AK027200 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="interleukin-13"
/protein_id="An63204.1"
/db_xref="G1:7528274"
/translation="MALMLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
                                                                                                                                                                                                                                                                                                                                                                                                    human STS W
Human inter
                                                                                                                                                                                                                                                                                                                                                              7 Homo sapi
Rattus Norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapi
Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
1. .1302
/organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                          A29931 Sequence co
I58494 Sequence 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AP001873 Homo sapi
U86662 Lycopersico
                          [58489 Sequence 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone BA0
                                      AR027065 Sequence
186198 Sequence 4
A52326 Sequence 1
AR027062 Sequence
                                                                                                                      186195 Sequence 1
134549 Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Carnivora; Fissipedia; Canidae; Canis. 1 (bases 1 to 1302).
Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length cDNA and expression of biologically active recombinant protein J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                              AC074127 I
L26913 Rat
G06679 hur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL425596 c
AC087437 H
AP001873 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALIGNMENTS
                                                                                                                                                                                                                                                                                                                     HUMIL13B
HSU31120
AC074127
RATIL13A
G06679
HSU10307
HUM11DC99Z
                                                                                                                                                                                                                                                                                HUM11DC98Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MUSIL13A
HSM802685
AK027200
                                                                                                                                                                                                                                          MUSSTCPE
IS8495
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC074127
AC084392
AC005742
AC020886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC087437
AP001873
LEU86662
A29950
IS8489
AR027065
I86198
AS2326
AR027062
I34549
I345494
AC29931
IS8484
                                                                                                                                                                                                                                                                                                AC004039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF244915.1 GI:7528273
                                                             10
                                                                                                                   10
                                                                                                                                                                            20
                                                                                                                                                                                                   (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                50282

5600

78600

78600

78600

78700

1159500

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

23700

23700

23700

23700

23700

23700

23700

23700

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

2370000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

237000

2370000

237000

2370000

237000

237000

237000

237000

237000

2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dog.
Canis familiaris
                                                                                                                                                                                                                                                                                3395
    11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang, S.
    209.4
209.4
207.6
207.6
207.6
207.6
207.6
                                                                                                                                                          203.4
201.8
201.8
201.8
198.6
17.2
172.2
175.2
169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.8
1169.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EATURES
    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
```

```
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                        180
                                                                                                                                                                                                               420
                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                   009
                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                     Gaps
                                                                 9
                                                                           9
                                                                ccatggagctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctc
                                                                                                                                                                       gcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagagg
                                                                                                                                                                                        atgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagtgaacgcagc
                                                                                                                                                                                             CCATGGAGCTGAGCCCAGCCATGCCTTGGTGCATGGGGCCCAGCCGGGTGGCCCTC
                                                     .;
0
                                         Length 1302;
                                                     Indels
                                         100.0%; Score 1302; DB 7; 100.0%; Pred. No. 1.7e-269;
                                                     ö
                                                    0; Mismatches
                 6
                 340
           448. .1302
318 c
                                                     Conservative
                                               Similarity
                 ø
                 337
                                        Query Match
Best Local Simi
Matches 1302;
          3'UTR
BASE COUNT
ORIGIN
                                                                                         61
                                                                                                    61
                                                                                                                            121
                                                                                                                                                    181
                                                                                                                                                                241
                                                                                                                                                                                      301
                                                                                                                                                                                                   301
                                                                                                                                                                                                               361
                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                121
                                                                                                                                        181
                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                      561
                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                          841
                                                                                                                                                                                                                                                                                                                                                                                                                                      901
```

* 36539 39 * 39568 41				0 0	* 105543 108 * 108419 113 * 113660 116	ť	* 155038 170 * 170051 196	* 196831 202 * * 202836 213 * EEATURES * Locatio	source 1213 /organi /db_xre	/clone= BASE COUNT 60084 a 42812 ORIGIN	Query Match Best Local Similarity 99 Matches 907; Conservativ		Oy 399 cctgctcacctatgtaag 	Oy 459 ttagcatccttatctgta 	Qy 519 ccgacgtcacaaatttct	Qy 579 cctcagcctgcaccgcct
Db 901 GCTTTAGAGAGTCCCTGGGAATAAGCACTGTGTGTAAAATTCTGCTACCTCACTGGGATC 960  Oy 961 ctggggccgacacaggggacaggagaaagggtcagagatgctgtctgt	1021 gcagctggccctcagccaggcagtaatttattgttttccttgtatttaaagttaagaaa 	Oy 1081 taaaatatgttatcaaagagttaataatatatagaagagtagcctaaaaggctgcatttg 1140 	Oy 1141 gtgtgtgtggccaggccgggcgggtggggagggggtgttgtcactgaatgtgctcttt 1200 	Qy 1201 cactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaaaaa	Qy 1261 aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	HTG 29-SEP	Cants familiaris chromosome 4 clone RPCI-81 39UC13, IN PROGRESS ***, 25 ordered pieces. AF276990. AF276990.1 GI:9964079 HPC: HPC: BHASE?	SOUNCE dos dos Canis familiaris ORGANISM Canis familiaris Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Carnivora; Fissipedia; Canidae; Canis.	REFERENCE 1 (bases I to 213343) AUTHORS Dubchak,I., Brudno,M., Loots,G.G., Pachter,L., Mayor,C., Rubin,E.M. and Frazer,K.A. TITLE . Active conservation of noncoding sequences revealed by three-Way	JOURNAL Genome Res. 10 (9), 1304-1306 (2000) MEDLINE 20442524 PUBMED 1098448	REFERENCE 2 (Dases 1 to 21343) AUTHORS Blankespoor.C.M., Dean,W.B. and Lewis,K.D. TITLE Direct Submission JOURNAL Submitted (10-JUN-2000) Genome Sciences Department, Lawrence Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, CA 94720,	USA * NOTE: This is a 'working draft' sequence. It currently * COMMENT * * NOTE: This is a 'working daps between the contigs * are represented as runs of N. The order of the pieces	<pre>* is believed to be correct as given, however the sizes * of the gaps between them are based on estimates that have * provided by the submitter. * This sequence will be replaced</pre>	* by the finished sequence as soon as it is available and * the accession number will be preserved.  * 1 16269; config of 16269 bp in length * 1 16269; config of 16209 bp in length	* 16270 24613: gorp of mnown length * 24614 28694: contig of 4081 bp in length * 24614 28694: contig of 4081 bp in length	* 28695 31694: contig of 3000 bp in length  * 31695 32391: contig of 697 bp in length  * 32392 36538: contig of 4147 bp in length

```
ttagggaggtggggggggggagaaccatttcctcagctggga 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tgcctccatggagctgagcccagccaccctgccttggtgcat 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recetectecgtetgeaetteateaaegetgagggaaageaetg 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Indels 4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 213343;
                                                                                                                                                                                                                                                                                                                                                                                                                105542: contig of 8955 bp in length agap of unknown length length agap of unknown length length gap of unknown length length gap of unknown length length contig of 5250 bp in length gap of unknown length longth gap of unknown length gap of unknown length

contig of 3029 bp in length

contig of 1597 bp in length

gap of unknown length

contig of 14895 bp in length

contig of 14895 bp in length

contig of 14802 bp in length

contig of 13802 bp in length

gap of unknown length

contig of 1279 bp in length

gap of unknown length

contig of 1279 bp in length

gap of unknown length

contig of 1574 bp in length

contig of 1874 bp in length

gap of unknown length

contig of unknown length

gap of unknown length

gap of unknown length

gap of unknown length

gap of unknown length

contig of 1876 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13343: contig of 10508 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68.4%; Score 890; DB 78;
99.0%; Pred. No. 1.1e-180;
ive 0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nism="Canis familiaris"
ref="taxon:9615"
nosome="4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e="RPCI-81 390C13"
12 c 44046 g 66392 t
                                                                                                                                                                                                                                                                                                      3132:
                                                                                                                                                                                                                                                                                                                                                     18901:
                                                                                                                                                                                                                                                                                                                                                                                                  6587:
                                                                           1164:
                                                                                                                      6023:
                                                                                                                                                                   9825:
                                                                                                                                                                                                                1104:
                                                                                                                                                                                                                                                           ,2258:
```

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES

    (bases 1 to 213343)
    Dubchak, I., Brudno, M., Loots, G.G., Pachter, L., Mayor, C., Rubin, E.M. and Frazer, K.A.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94720,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF276990 213343 bp DNA HTG 29-SEP-2000 Canis familiaris chromosome 4 clone RPCI-81 390C13, *** SEQUENCING IN PROGRESS ***, 25 ordered pieces.
                                                   111568 GAGCTGGGGGCCCAGTGACTCGGCTTTAGAGAGTCCCTGGGAATAAGCACTGTGTGTAAA 111509
                                                                                                                                                                                                                                                                                                                                                    Db 111509 ATTCTGCTACCTCACTGGGATCCTGGGGCCGACACAGGGGACAGGGGACAGGGTCAGAGA 111449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 111808 GGGCCCAGCCGGGTGGCCCTCCTCCGTCTGCACTTCATCAACGCTGAGGGAAAGCACTG 111749
                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Active conservation of noncoding sequences revealed by three-Way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1118
                                                                                                                                                                                                                                                                                                                                                                                                      tgctgctcttgtctgccactcagcagctggccctcagccaagcagtaatttattgttttt 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Blankespoor, C.M., Dean, W.B. and Lewis, K.D.
Direct Submitssion
Submitted (10-JUN-2000) Genome Sciences Department, Lawrence
Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, CA
                                                                                                                      111388 CCTTGTATTTAAAGTTAAGAAATATATTGTTATCAAAGAGTTAATAATATATAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1059 ccttgtatttaaagttaagaaataaaatatgttatcaaaagagttaataatatatagaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gagctgggggcccagtgactcgggtttagagagtccctgggaataagcactgtgtgtaaa
                                                                                                                                                                                                                                                                                                                                    attetgetaceteaettgggateetggggeegacacaggggacaggaaaagggteagaga
NOTE: This is a 'working draft' sequence. It currently consists of 25 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Res. 10 (9), 1304-1306 (2000) 20442524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:9964079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 213343)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db 111208 GTGACAAGACCTAA 111193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gtgacaagagaaaaa 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      species comparisons
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF276990.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0984448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                  939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
AF276990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                  Ωp
                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                      ò
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
Gaps
* is believed to be current them are busc.

* of the gaps between them are busc.

* provided by the submittor.

* This sequence will be replaced

* by the finished sequence as soon as it is available and

* the accession number will be preserved.

* 1 16269: contig of 16269 bp in length

gap of unknown length

""" contig of 8144 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 78; Length 213343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 14859 bp in length f unknown length g of 13802 bp in length f unknown length of 1279 bp in length f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f unknown length
g of 2876 bp in length
f unknown length
g of 5250 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 31660 bp in length
unknown length
of 6931 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 26780 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 15769 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of 10508 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
of 1597 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
of 2778 bp in length
                                                                                                                                                                                                                                                                                    unknown length
of 3000 bp in length
                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 4147 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown length
of 7686 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6005 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 1154 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
of 874 bp in length
                                                                                                                                                                                                                                                                                                                                                          of 697 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown length
of 15013 bp in l
unknown length
                                                                                                                                                                                                                                                                                                                                    unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 8955 bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 3029 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31.4%; Score 408.4; DB 78; larity 97.4%; Pred. No. 2.7e-77; Conservative 0; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .213343
/organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42812 c 44046 g 66392 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="RPCI-81 390C13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig gap of contig gap of contig co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of contig
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig cap of contig contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 213343: contig o
Location/Qualifiers
                                                                                                                                                                                                                                                                                    gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
                                                                                                                                                                                                                                                                                                                                                        contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dap of
                                                                                                                                                                                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                              gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /chromosome="4"
                                                                                                                                                                                                                                                                                                        31694:
                                                                                                                                                                                                                                                                                                                                                        32391:
                                                                                                                                                                                                                                                                                                                                                                                                     36538:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   39567:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41164:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56023:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69825:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71104:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72258:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73132:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88901:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96587:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105542:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        108418:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113668:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116446:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148106:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155037:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170050:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     196830:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202835:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . Query Match
Best Local Similarity
Matches 415; Conserv
                                                                                                                                                                                                                                                                                                          28695
                                                                                                                                                                                                                                                                                                                                                        31695
                                                                                                                                                                                                                                                                                                                                                                                                     32392
                                                                                                                                                                                                                                                                                                                                                                                                                                                   36539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 108419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              116447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ھ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60084
```

197 193 257 253 317 313 377 373 437 433 496 489 551 549 608 608 667 664 723 724 769 784 816 844

```
CCCGCACAAGGTCTCAGCTGGGCAGTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA
                                                                                                                                                                                                                                                 agttccagattcatttttttttccgacgtcacaaatttcttagggaggtggggg-----
                                                                                                                                                                                                                                                                                                                                            AGGGCCCTGACTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------tettgetgtacetgggagtggcacagacatgtttettettageetta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74 rereactrecerresesserrisectrecessesecersisecreereracasecercas
                                                                                                                                        gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                        ctctcaaaagcccgcggcaggcagatttccagtgaacgcaggccgagacaccaaaattga
                                                                                                                                                                                                                                     agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                  tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                        GTTCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTGA
                                                                                                                                                                                                                                                                                                                                                                              ----AGCCGACCTCAGCCTTCCCTTGCCCAGGCTCAGCTGGTGGGCCTCCTCTTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGGT
                                                 ggageteattgaggagetggteaacateacceagaate---aggeateetgeaacgg
                                                                                              cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                           ctgagcccagccaccctgccttggtgcatggggcccagccggggtggcctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----gottggagctggggcccagtgactcgggtttaga-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1069
  81
                                               141
                                                                                            198
                                                                                                                   194
                                                                                                                                         258
                                                                                                                                                                254
                                                                                                                                                                                       318
                                                                                                                                                                                                              314
                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                  438
                                                                                                                                                                                                                                                                                                         434
                                                                                                                                                                                                                                                                                                                                497
                                                                                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                             552
                                                                                                                                                                                                                                                                                                                                                                                                                        609
                                                                                                                                                                                                                                                                                                                                                                                                                                               609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1009
                                                               qq
                                                                                                              g
                                                                                                                                                           g
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                    qa.
                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q_{\mathbf{y}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                g
                                       δ
                                                                                            οχ
                                                                                                                                        οy
                                                                                                                                                                                      οy
                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                  δý
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTORMLSGFCPHKVSAGGFSSL
HVRDTKIEVAOFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             фe
                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1270)
McKenzie, A. N. J., Culpepper, J. A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, M., Cocks, B.G., Menon, S., de Vies, J. E., Banchereau, J. and Zurawski, G. R.
Interialial a T cell-derived cytokine that regulates human monocyte and B cell function
Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                         881
                                              761
                                                                                            821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                          cytokine; growth factor; interleukin 13; regulatory protein.
Homo sapiens cDNA to mRNA.
Homo sapiens
cccatgactgtcccctcctcagagcaaagtgcagcattacagtggaggcagatatgtgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29.0%; Score 378; DB 93; Length 1270;
.larity 66.2%; Pred. No. 3.9e-71;
Conservative 0; Mismatches 290; Indels 108
                                                                                                                                                                                                                                                                                                                                                                             cds
                                                                                                                                                                                                                                                                                                                                                                PRI
complete c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311
                                                                                                                                                                                                                                                                                                                                                                            mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="GI:186276"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                         HUMIL13A 1270 bp mRNA
HOMO sapiens interleukin 13 u
L06801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336 g
                                                                                                                                                                                                                                                                                                                                                                                                  L06801.1 GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
es 780; Conserv
                                                                                                                                                                                                                                                                                                       114087 TGCTGT 114092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ø
                                                                                                                                                                                                                                                                                tgctct 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
 64.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
FEATURES
                                             702
                                                                    113787
                                                                                           762
                                                                                                                113847
                                                                                                                                       822
                                                                                                                                                              113907
                                                                                                                                                                                     882
                                                                                                                                                                                                          113967
                                                                                                                                                                                                                                  942
                                                                                                                                                                                                                                                        114027
                                                                                                                                                                                                                                                                                1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                   HUMIL13A
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE CC
ORIGIN
                                                                                                                                                             g
                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                       a
õ
                                            ò
                                                                                           ò
                                                                                                                                      δ
                                                                                                                                                                                     ò
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
```

964

12;

g

```
polyA_signal
COUNT 293
 misc_feature
                              misc_feature
                                                           misc_feature
                                                                                        misc_feature
                                                                                                                                                                                            Query Match
Best Local Simi
Matches 780;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          258 (
                                                                                                                                                                                                                                                                                                                                                                                                                                198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     737
                                                                                                                                  BASE
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Op
                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                 Direct Submission
Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches,
Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE
2 (bases 1 to 128)
Minty, A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C.,
Kaghad, M., Labit, C., Leplatols, P., Liauzun, P., Miloux, B., Minty, C.,
Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPCPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="SWISS-PROT:P35225"
/translation="MALLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGGFSSL
                                                                                                                                                                                                                                                                                                                                                                     Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="alternative; ATG at 15 is an alternative start codon"
                                                                                       17-FEB-1997
                                                                                                                                                                                            Eutheria
                                                                                                                                                                                            Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                                        PRI
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Vertebra
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="NC30; alternative"
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref "SWISS-PROT: P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=experimental
/protein_id="CAA48823.1"
/db_xref="G1:580330"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="GI:673420"
                                                                                                                                                                                                                                                                                                                                                                                   and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                 N H.sapiens interleukin-13 mRNA. X69079 X69079 II:297787 Hymbokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence∍experimental
                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /replace="a"
                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                      Minty, A.J
                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variation
LOCUS
DEFINITION
                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                          RESULT
HSNC30
```

```
769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86 TCTCACTTGCCTTGGCGGCTTTGCCTCCCAGGCCCTGTGCCTCCTCTACAGCCCTCAG 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        378 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           797 CACTTCACACACAGGAACTGAGGCAGACAGCTCCAGGCACACTTCTTGGTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21 cctcgctcctcctgcattggctctgggctccatggggctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26 CCTCAATCCTCTCTGTTGGCACTGGCCCTCATGCGCGCTTTTGTTGATGACCACGGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HILLIIII TITITI TITITI TITITI II TITITI II TITITI III TITITI II TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              438 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccacta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              446 GTTCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------tottgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318 ctctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agttccagattcatttttctttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagea tggtgtggagegtcaacetgacegeeggeatgtactgegeagetetagaatetet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               29.0%; Score 378; DB 92; ilarity 66.2%; Pred. No. 3.9e-71; Conservative 0; Mismatches 290;
                                                                                                                                                                                                                                                                                                                      311
                                                                                    motif"
'note="ATTTA motif"
                                                                        motif"
                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                         1153. .1157
/note="ATTTA
                                    873. .877
/note="ATTTA
                                                                                                                                                                                                                                                                      1264. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                      Ø
```

	da by	378 agtgatccagttggtgaaa:
gagtocotgggaataagoactgtgtgtaaaattotgctaccactgggat 978gagtocotgggaataagoactgtgtgtaaaattotgctacctcactgggat 959	da ya ya	434 GTTCAACTGAAACTTCGAA 497 agttccagattcattttc 490 AGTTGCAGATTCATTTC 552gggggagaaccattto
CCTGGGGCCTCGGACCTCATCCGAGGCTCAGGAGGGGCAGAACAGCCGCTCCT 1096  gttgccactcagcagtggcctcagccaagcagtaatttattgtttttccttgtattt 1068	do Qy	TTAG
agttaagaaataaaatatgttatcaaagagttaata 1106 	ga & ga	609AGCCGACCTCAGCCT 668tgcacttcatcaacg         665 AGGCCCTGAGCTCGGTGG
134548 1290 bp DNA PAT 06-FEB-1997 Sequence 1 from patent US 5596072. 134548 134548.1 GI:1825339	40 do do do	724 agcaaagtgcagcattaca                      725 AGCACACTGTAGCATTACA 770tcttgc      785 CACTTCACACAGGGAAC
M Unclassified.  Unclassified.  1 (bases 1 to 1290)  Culpepper, J., McKenzie, A., Dang, W. and Zurawski, G.  Method of refolding human 1L-13  Patent: US 5596072-A 1 21-JAN-1997;  Location/Qualifiers  Toganism="unknown"  Tag 8 a 335 c 336 g 311 t	64 65 65	817 tttattattgtgtgttatt.
tch 29.0%; Score 378; DB 10; Length 1290; 780. Sail Similarity 66.2%; Pred. No. 3.9e-71; 780; Conservative 0; Mismatches 290; Indels 108; Gaps 12; cctcgctcctcctgcattggctctgggctctggttgactgggtcattgc 80	6	960 cctggggcc 1025 CCTGGGGCCTCGGAGCCTC 1009 gtctgccactcagcagctg
119 119 125 225 225 231 331 337	RESULT A2994B LOCUS LOCUS DEFINITIC ACCESSION VERYWORDS SOURCE ORGANIES REFERENCE AUTHORS	RESULT 7 A29948 LOCUS DEFINITION Coding sequence f. ACCESSION VERSION SOURCE SOURCE SOURCE SOURCE SOURCE SOURCE SOURCE STITLE AUTHORS SOUTCH A29948 1 G1:1249 SYNTHETIC CONSTRU A79948 A111Cial sequen A111cia

```
ince.
1297)
Tan, P., Guillemot, J.C., Kaghad, M., Labit-le
Leplatois, P., Magazin, M. and Minty, A.
Caplatois, P., Activity, recombinant DNA coding for
ransformed cells and microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --gacacaggggacaggagagaggtcagagatgctgctct 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCCGAGGCAGGGTCAGGAGGGGGCAGAACAGCCGCTCCT 1084
                                                                                                                                                                                                                                              723
                                                                                                                                                                                                                                                                    724
                                                                                                                                                                                                                                                                                                                                            ctgtacctgggagtggcacagacatgtttcttcttagcctta 816
                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                             A ----AGCATCATTATTTGCAGACAGGACCTGACTATTGA 489
                                                                                               551
                                                                                                             cctcagctgggacctcagcctgcaccgcctgcctccatggag 608
                                                                                                                                                                       608
                                                                                                                                                                                              667
                                                                                                                                                                                                                                                                                            agtggagg---- cagatatgtgtgggaggggg--- 769
                                                                                                                                                                                                                                                                                                                                                                                            ttaaacaagtgtctttgttgtgctggggacagggagtg--- 873
                                                                                                                                                                                                                      664
                                                                                                                                                                                                                                                                                                           7 bp DNA PAT 23-JUN-1995 for protein with cytokine like activity.
                                                                                                                                                                                              GACCCAGGGATGACATGTCCCTACACCCCTCCCTGCCCTAG
                                                                                                                                                            getgagggaaagcactgcatccatgactgtcccctcctcag
                                                 aacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                ctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uct.
```

œ

```
Op
                                                                                           g
                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                             q
                                                                    δý
                                                                                                                  ò
                                                                                                                                                                ò
                                                                                                                                                                                       g
                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                PP
                                                                                                                                                                                                                                                                                                        ŏ
                      ò
                                                                                                                                                                                                             ρý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Óγ
                                                                                                                                       /translation="MHPLLNPLLLALGLMALLLTVIALTCLGGFASPGPVPPSTALR
ELPEELVNITONGKAPLCNGSWWSINLTADMYCAALESLINVGGCSAIEKTQRMLSG
FCPHRVSAGGPSSLHVRDTYTEVAGFVKDLLLHLKKLFREGRFN"
341 c 336 g 311 t
                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                                   265
                                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                                                                257
                                                                                                                                                                                                                                                                                                                                                                                                                                                             317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --cagatatgtgtgggagggg--- 769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          561
                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                       cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                                                 ggagetcattgaggagetggtcaacatcaccagaatc--aggcatccetctgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                           cercaarcererefrescaeressecrearescerrrrerrerescaessereares
                                                                                                                                                                                                                                                                                                                                          TCTCACTTGCCTTGGCGGCTTTGCCTCCCCAGGCCCTGTGCCCTCCTCTACAGCCCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGGGAGGGTAAAATTCCTTAGCTTAGACCTCAGCCTGTGCTGCCGCCTTCAGCCT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGCCCCTGAGCTCGCTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                                                                                                                                                                                                                                                                                        GGAGCTCATTGAGGAGCTGGTCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCATGGTATGGAGCATCAACCTGACAGCTGACATGTACTGTGCAGCCCTGGAATCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctctcaaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agigatccagtiggigaaaaaccigcicacciatgiaaggggagtitaicgccaiggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agttccagattcatttttttttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTTGCAGATTCATTTTTCTTTCTGATGTCAAAATGTCTTGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGGCTCAGCCTGGTGGGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                108;
                                                                                                                                                                                                                       Length 1297;
                                                                                                       activity
                                                                                                                                                                                                                                                Indels
                                                                                                     /product="protein with cytokine like
/protein_id="CAA01982.1"
/db_xref="G1:1249029"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        =
=
=
=
=
                                                                                                                                                                                                                         DB 9;
                                                                                                                                                                                                                                                291;
                                          /organism="synthetic construct"
/db_xref="taxon:32630"
15. .455
                                                                                                                                                                                                                       28.9%; Score 376.4; DB 9 11arity 66.1%; Pred. No. 8.7e-71; Conservative 0; Mismatches 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0506574-A 21 30-SEP-1992;
                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agcaaagtgcagcattacagtggagg---
                                                                                /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                    Similarity
Patent: EP
ELF SANOFI
                                                                                                                                                                           309
                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                      Local
                                    source
                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     562
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                           56
                                                                                                                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                      206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    438
 JOURNAL
                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        724
                                                                     CDS
                        FEATURES
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                            1036
                                                                                                                                                                                                                    1008
                                                                                                                                                                                                                                           1096
                                                                                                                                                                                                                                                                   1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                       07-0CT-1997
                                                                                                                                                                    cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                     CCTGGGGCCTCGGGGCCTCATCCGAGGCAGGGTCAGGAGAGGGGCAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                    gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggagetcattgaggagetggtcaacatcacccagaatc---aggcatccetctgcaacgg
AGCACACTGTAGCATTACAGTGGGTGCCCCCCTTGCCAGACATGTGGTGGAGGACCC
                                                                      ------gcttggagctgggggcccagtgactcgggtttaga-------
                                                                                                                                            GTGGCTGCTGCCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCAATCCTCTCTGTTGGCACTGGCCCTCATGGCGCTTTTGTTGACCACGGTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGCTCATTGAGGAGCTGGTCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGG
                       ....-----tcttgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases I to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le Bouteiller, C., Leplatols, P., Magazin, M. and Minty, A. Protein having interleukin 13 activity, recombinant DNA this protein, transformed cells and microorganisms Patent: US 5652123-A 15 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10; Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 376.4; DB 10;
Pred. No. 8.7e-71;
0; Mismatches 291;
                                                                                                                                                                                                                                                                                                                   aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                               u
                                                                                                                                                                                                                                                                                                                                                                                                                 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                       DNA
US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                336
                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15 from patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.9%;
66.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 779; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ಗ
                                                                                                                                                                                                                                                                                                                                                                                                                                        158488.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                 -\<del>\</del>
                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                              æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                           1037
                                                                                                                                                                                                                                                                   1009
                                                                                                                                                                                                                                                                                          1097
                                                                                                                                                                                                                                                                                                                  1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                              197
                                                                                              857
                                                                                                                                            917
                                                                                                                                                                                                                    096
                                                                                                                                                                                                                                                                                                                                         1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   206
                      770
                                                                      817
                                                                                                                    874
                                                                                                                                                                    606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                              RESULT
I58488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
```

```
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
        317
                         325
                                          377
                                                           385
                                                                             437
                                                                                              445
                                                                                                              496
                                                                                                                               501
                                                                                                                                                 551
                                                                                                                                                                  561
                                                                                                                                                                                   608
                                                                                                                                                                                                    620
                                                                                                                                                                                                                      667
                                                                                                                                                                                                                                      919
                                                                                                                                                                                                                                                        723
                                                                                                                                                                                                                                                                       736
                                                                                                                                                                                                                                                                                          769
                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                            816
                                                                                                                                                                                                                                                                                                                                            856
                                                                                                                                                                                                                                                                                                                                                              873
                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                908
                                                                                                                                                                                                                                                                                                                                                                                                                 916
                                                                                                                                                                                                                    ctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                           386 GGTGGCCCAGTTTGTAAAGGACCTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACG
                                                                                                             tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                          agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                                                                                                                                                                   CACTICACACACAGGCAACTGAGGCAGACAGCTCAGGCACACTTCTTGGTCTTA
                                                                                                                                                                                                                                                                                                                                                            -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                            977 GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960 cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1037 CCTGGGGCCTCGGAGCCTCATCCGAGGTCAGGAGGGGCAGAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1009 gictgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
         gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                   ------tettgetgtacetgggagtggcacagacatgttettettageetta
                                                                                                                                                                                                                                                                                                                                                                             857 TTTATTATTGTGTGTTTTAAATGAGTGTGTTTGTCACCGTTGGGGGATTGGGGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                             874 -----gcttggagctggggcccagtgactcgggtttaga-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               562 TTAGGGAGGGGTAAAATTCCTTAGCTTAGACCTCAGCCTGTGCTGCCCGTCTTCAGCCT-
                                                                                                                                                                                                                                                        ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                  606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1157
        258
                                                                                                             438
                                                                                                                                                                                                                                     621
                                                                                                                                                                                                                                                                                                                          770
                                                                                                                                                                                                                                                      668
                                                                                                                                                                                                                                                                                         724
                                                                                                                                                                                                                                                                                                                                           197
                      q
                                                         qq
                                                                                         g
                                                                                                                            g
                                                                                                                                                             q
                                                                                                                                                                                                  g
                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                               pp
                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
        õ
                                        ò
                                                                            ò
                                                                                                             ò
                                                                                                                                         ٠à
                                                                                                                                                                                 ò
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
```

AF043334 417 bp mRNA PRI 21-FEB-1998 Homo sapiens interleukin 13 precursor (IL13) mRNA, complete cds. AF043334 GI:2905619

LOCUS DEFINITION

AF043334

RESULT

ACCESSION VERSION

KEYWORDS

```
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSWVWSINLTAGMYCAALESLINVSGCSAIEKTORMLGGFCPHKVSAGOFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50C-1min, 72C-3min, 30 cycles;
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 417)
                                                                                                                                  oŧ
                                                                                Jang, J.S. and Kim, B.E.
Direct Submission
Submitted (15-JAN-1998) Protein Engineering, General Institute
Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong,
Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63 AGGCCCTGTGCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCAC 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51 catggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccc 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         288 aaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttc 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 CATGGCGCTTTTGTTGATGACCACGGTCATTGCTTCACTTGCCTTGGCGGCTTTGCCTTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 gagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 171 ccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183 TGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      228 cggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243 GAAGACCCAGAGGATGCTGGGCGGGATTCTGCCCGCACAAGGTCTCAGCTGGGGGAGTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89; Indels
                                                                                                                                                                                                                                  forward primer (5'-cteaatectetectgttggea-3')
reverse primer (5'-tagteaggtectgtetetge-3')
2) second DCR i
forward primer (5'-cteatggegettttgttgaecacg-3')
reverse primer (5'-gatgetttegaagttteagttgaa-3')
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tch 19.3%; Score 251.6; DB 88; al Similarity 77.6%; Pred. No. 4.5e-44; 318; Conservative 0; Mismatches 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /PCR_conditions="94C-1min, 50 DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="interleukin
complement(394. .417)
/note="second PCR"
121 c 108 g
                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene=".IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .399
                                                                                                                                                                                                                   1) first PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                            Sosa-gu, Bu
Nested PCR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
    ORGANISM
                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                         AUTHORS
                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
```

```
2143. .2483
/gene="ill3"
                                                                    856
                                                                                                                 Query Match
   intron
                                                                   BASE COUNT
ORIGIN
                                                                                                                                   Matches
                                                                                                                                                            339
                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                    2663
                                                                                                                                                                                                                                                                                                                                           267
                                                                                                                                                                                                                                                                                                                                                                2723
                                                                                                                                                                                                                                                                                                                                                                                      626
                                                                                                                                                                                                                                                                                                                                                                                                                                  681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1023
                                    exon
                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 896
                                                                                                                                                            õ
                                                                                                                                                                                g
                                                                                                                                                                                                       οy
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITQNQK
VPLCNGSWWWSLNITSSMYCAALDSLISICSVCSVIQRTKKMLNALCPHKPSAKQVSSE
YRDFWIEVROPELKDLIRHSRIVFRNERFN"
101n(718. .789,1742. .1795,2038. .2142,2484. .2588)
/gene="1113"
                                                                                                                                                                                                                                                                                                    2 (bases 1 to 3520)
Buitkamp,J.
Direct Submission
Submitted (19-JAN-1999) Buitkamp J., Tierzucht, TU-Muenchen, Alte
Akademie 12, 85350 Freising, GERMANY
Location/Qualifiers
                                                                                                                                                                                                                                                              chromosomal
                                                                                                                                                                                                                 Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae;
10-SEP-1999
                                                                                                                                                                                                       Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Join(658, .789,1742, .1795,2038, .2142,2484, .2591)
/gene="1113"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     join(588. 789,1742. .1795,2038. .2142,2484. .2591)
/gene="ill3"
                                                                                                                                                                                                                                   Dotains, 23.1.

1 (bases 1 to 3520)

Builkamp, J., Jann, O. and Fries, R.
The cartle interleukin-13 gene genomic organization, olocation, and evolution of the promoter

Immunogenetics 49 (10), 872-878 (1999)
                                                         408 ctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                                                                                                                                                                       Craniata; Vertebrata;
                                                                                                                          MAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="interleukin-13"
/protein_id="CAB46636.1"
/db_xref="G1:5420145"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="interleukin-13"
790. .1741
                                                                                                               prAl32441 3520 bp DNA
Bos taurus ill3 gene, exons 1-4.
AJ132441
                                                                                                                                                                                                                                                                                                                                                                         1. .3520<sup>°</sup>
/organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9913"
/chromosome="4"
                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                     /dev_stage="adult"
                                                                                                                                                                     gene; interleukin-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                /map="4q23-31"
                                                                                                                                                                                                                                                                                                                                                                                                                                           IS16b"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                         AJ132441.1 GI:5420144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /number=2
1796. .2047
/gene="ill3"
/number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           588. .2591
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  588. .789
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             790. .1741
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2048. .2142
/gene="ill3"
/number=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1742. .1795
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                             "-euolo/
                                                                                                                                                                                                                            Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  657
                                                                                                                                                                                  Bos taurus.
                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                              99367396
                                                                                                                                                                     1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mat_peptide
                                                                                                                                 DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                   RESULT 10
BTA132441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intron
                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                             MEDLINE
REFERÈNCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 exon
                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                         LOCUS
 ò
                    g
                                            ò
                                                                 g
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                        2662
                                                                                                                                                                                                                                                                                                                                                                                                                                        2722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggggccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgccactcagc 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agotggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaata 1082
                                                                                                                                                                                                                                    2483 GCAGGTTTCCAGTGAGTACGTCCGAGACACCAAAATTGAAGTGGCCCAGTTCTTAAAAGA 2542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3203 GGGGCCAAGGCAAGGGACAGGAGAGAGCCAGAGTAGCCACTCTTGTCTGATAGCCAGC 3262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3263 AGTGGGCCCTCAGCCAAA---TAATTTATTATTTTCCTAGTATTTAAAGTTAAGTATTA 3319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           680
                                                                                                                                                                                                    gcagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaa 398
                                                                                                                                                                                                                                                                     -----acagtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtgg 790
                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                      3083 GAAAACTTGGGGCTCCAGCACTTAAAGCAGTGGGCATTAAGAAATCCCTGGCAATAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                       -tgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttc---atcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2903 ATTABACACCTGGTGGAGGAACACCTGCTTTACACAGGGGCAACTGAGGCAAAAAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ------actcgggtttagagagtccctgggaataagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3143 CCTTGTTTTGCAAAACTTCTTGCTACCTCCACTAAAACTTCTGCTACTCACTAGGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                         cotcagotgggacotcagoctgcacogoctgcctccatggagotgagoccagococ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cgctgagggaaagcactgcatcccatgactgtcccctcctcagagcaaagtgcagcatt-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9tttgtgctggggacagggagtgg------cttggagctgggggcccagtg-
|| || || || || || || |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctgtgt------gtaaaattctgctacctggtacttctggtcct
                                                                                                                                                                    Indels 125;
                                                                                                                                     Length 3520;
                                                                                                                                  Score 232.2; DB 7;
Pred. No. 9.2e-40;
0; Mismatches 253;
                                                                   u
                                                                   873
                                                                     б
                                                                   857
/number=3
2484. .2591
/gene="ill3"
                                                                                                                                   17.8%;
62.5%;
                                                                   934 c
                                                    /number=4
                                                                                                                                                 Local Similarity 62.5
nes 629; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ū
```

```
181 AGCATGTACTGTGCAGCCCTGGACTCCCTGATCAGCATCTCCAACTGCAGTGTCATCCAA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5652123
                                                                                                                                                                                                                                                                                                                                                      Socation/Qualifiers
                                                                                                                                                                DNA
                                                                                                                                                                           В.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 17 from patent
158489
158489,1 GI:2477727
                                                                                                                                                         Nucleic acid fragment A29950
                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.1%;
ilarity 76.3%;
Conservative
                                                                                                                                                                                                   A29950.1 GI:1249030
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 271; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  I58489
                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
I58489
                                                                                                                                      RESULT
A29950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                q
                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="interleukin-13 precursor"
/protein_id="AAD22748_1"
/protein_id="AAD22748_1"
/db_xref="G1:455814"
/translation="MALLIFANIVLICFGGITSPSPVPSATALKELIEELVNITONOK
VPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;;
                                                                                                                                                                                                                                                                                                      complex on
                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovidae; Bovidae; Bov. 1 (bases 1 to 343) Trigona, W.L., Brown, W.C. and Estes, D.M. Punctional implications for signaling via the IL4R/IL13R complex c bovine cells
                                                                                                                                                                                                                                                                                                                                                             Trigona, W.T., Hirano, A. and Estes, D.M. Direct Submission Submission Submitted (16-JUN-1998) Veterinary Pathobiology, University of Missouri-Columbia, W213 Veterinary Medicine Building, Columbia,
                                   -----GTCACTGAAGAAACTGTTTCA 3414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-JAN-2000
partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52 atggcgctctggttgactgtggtcattgctctcactgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
           gtgtgtggccaggccggggcgggtgggggggggggggtgttgtcactgaatgtgctcttca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/cell_type="activated peripheral T lymphocytes"
1 .>343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 343;
                                                         1203 ctgactttgtcaaactggaagccagaaataaagatggtgacaagaga 1249
                                                                        precursor (IL-13) mRNA,
                                                                                                                                                                                                                                                                                                                   Vet. Immunol. Immunopathol. 72 (1-2), 73-79 (1999)
20080132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 219.8; DB 7
Pred. No. 2.9e-37;
0; Mismatches 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                         Bos taurus interleukin-13
AF072807
                         3375 GTGTGTGGACTGAGGGGGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YVRDTKIEVAQF"
                                                                                                                                                                                     AF072807.1 GI:4558813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16.98;
79.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .>343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                            65211, USA
                                                                                                                                                                                                                                                                                                                                                  0614495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Simi
Matches 273;
                                                                                                                                                                                                                           Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                          DEFINITION
                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
           1143
                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                  PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                229
                                                                                                                                 AF072807
LOCUS
                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                g
                                                         ò
                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
```

```
for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        283 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcag 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256 TTTTCCAGCTTGCATGTCCGAGACACCAAAATGGAGGTGGCCCAGTTTGTAAAGGACCTG 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tececqagecetgtgaetecetececaaeceteaaggageteattgaggagetggteaae 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196 ATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAG 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             343 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg 402
                        16 TCCCCAGGCCCTGTGCCCTCTACGGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC
                                                                                                                                                                                                                                                                                                                                              synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 384).
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding ithis protein, transformed cells and microorganisms
Patent: EP 0506574-A 23 30-SEP-1992;
ELF SANOFI
                                                                                                                                                                                                                                             23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-0CT-1997
289 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggtattcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                403 ctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                            349 agtgaacgcagccgagacaccaaaattgaagtgatccagttgg 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 209.4; DB 9;
Pred. No. 5.1e-35;
0; Mismatches 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .384
/organism="synthetic construct"
//db_xref="taxon:32630"
a 104 c 99 g 84 t
```

ä

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                115
                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                      220
                                                                          175
                                                                                                                                          340
                                                                                                                                                               295
                                                                                                                                                                                    400
                                                                                                                                                                                                         355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    400
                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                    186198
                                                                                                                                                                                                                                                                                                                     SOURCE
                             QQ
                                                                         qq
                                                                                                                   g
                                                                                                                                                             q
                                                                                                                                                                                                       Dp
                                                     á
                                                                                               ò
                                                                                                                                         οy
                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteins from prokaryotic
                                                       coding
                                                                                                                                                                                                        106 tccccgagccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaac 165
                                                                                                                                                                                                                                                    222
                                                                                                                                                                                                                                                                282
                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                          342
                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        goctcoccgagcoctgtgactcoctcoccaaccotcaaggagctcattgaggagctggtc 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55'GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                    16 TCCCCAGCCCTGTGCCTCTCTACGCCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC
                                                                                                                                                                                                                                                                                              accyccycatgtactycycagctctagaatctctgatcaatytctccyactycagcycc
                                                                                                                                                                                                                                                                                                         136 ACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTTGCAGGTGCC
                                                                                                                                                                                                                                                                                                                                         atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcag
                                                                                                                                                                                                                                                                                                                                                    atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg
                                                                                                                                                                                                                                                    atcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctg
                                                                                                                                                                                                                                                                                                                                                                                             256 TITICCAGCITGCATGCCGAGACACCAAAAICGAGGIGGCCCAGTITGIAGAAGGACCIG
                                                                                                                                                                                                                                                                                                                                                                                                                               ctcacctatgtaaggggggtttatcgccatggaaatttcagatgaagcatgaaaa 457
                  Caput.D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having interleukin 13 activity, recombinant DNA this protein, transformed cells and microorganisms Patent: US 5652123-A 17 29 JUL-1997;
                                                                                                                                                                                    .,
ش
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3;
                                                                                                                                                               Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 425;
                                                                                                                                                             Score 209.4; DB 10; Length
Pred. No. 5.1e-35;
0; Mismatches 81; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic partent: US 5856142-A 4 05-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 207.6; DB 9,
Pred. No. 1.3e-34;
0; Mismatches 84,
                                                                                                                     ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   u
                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                     Location/Qualifiers
                                                                                                          /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
116 c 110 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARO27065 · 425 bp DNA
Sequence 4 from patent US 5k
ARO27065
                                                                                                                    66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:5937905
                                                                                                                                                             Query Match
Best Local Similarity 76.3%;
Matches 271; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.9%;
75.7%;
                                                                                                                    104 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 271; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AR027065.1
                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown.
                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
VERSION
                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                    343
                                                                                                                                                                                                                                                                                                                                                                                                                            403
                                                                                                                                                                                                                                                                                                                                                                                                                                                  316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103
                                                                                                                                                                                                                                                    166
                                                                                                                                                                                                                                                                                               223
                                                                                                                                                                                                                                                                                                                                        283
                     REFERENCE
                                AUTHORS
                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
AR027065
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                    PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       상
```

```
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proteins from prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            103 gcctccccgagccctgtgactccctccccaacctcaaggagctcattgaggagctggtc 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                       10-JUN-1998
                                                                                                                                                                                                                             ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctcgactgcagc
                                                                                                                                                                              CTGACAGCTGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGT
                                                                                                                                                                 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCAACTGAAACTTCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .,
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified.

1 (bases 1 to 425)
Legoux.R., Maldondo,P. and Salome,M.
Method for the extraction of periplasmic pr
microorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 207.6; DB 1 Pred. No. 1.3e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66
                                                                                                                                                                                                                                                                                                                                       DNA
US 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. .425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                            425 bp
Sequence 4 from patent U.
186198
186198.1 GI:320F607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.9%;
75.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Sim
Matches 271;
```

Search completed: May 13, 2001, 14:20:29 Job time: 19109 sec

us-09-451-527-91.rge

adenosine re low adenosin adenosin

```
Human adenosine re
Canine interleukin
Canine interleukin
Cytokine N030. Q
Canine mature inte
                                                                                                                                                               Canine mature inte
Canine mature inte
Canine interleukin
Canine interleukin
Sequence encoding
                                                                                                                                                                                                                                                        G1y41-Cytokine cod
Asp41-Cytokine cod
Human low adenosin
Human low adenosin
                                                                                                                                                                                                                                                                                                                                     Human adenosine re
                                                                                                                                                                                                                                                                                                                                                      Human adenosine re
                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                       Human secreted pro
Human colon cancer
                                                                                                                                                                                                                                                                                                                                                                                                                             Human secreted pro
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mouse piwi gene, d
cDNA encoding whea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human breast and o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein PRO271 cDN
Human CLAR1 coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA encoding an a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human uncoupling p
Sequence of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human colon cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encoding an ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sednence of
     Human
                                         Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
52..447
/*teq a
/product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGNMENTS
                                                                                                                                              255560
255565
255566
255566
                                                                                                                                                                                                                      255553
Q56693
                                                                                                                                                                                                                                                                                             F21331
F21337
A35209
                                                                                                                                                                                                                                                                                                                                                                     Z55552
C99862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z36893
C90463
                                                                                                                                                                                                                                                         028944
                                                                         255563
                                                                                                                                                                                                                                                                            228943
                                                                                                                                                                                                                                                                                                                                                       A35215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X27245
                                                                                                             228947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       236914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N91467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Z55555 standard; cDNA; 1302 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yang S, Dreitz MJ,
 21
21
21
21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
6952
6952
14978
14978
390
390
1297
333
                                                                                                                                              333
330
330
272
272
1212
336
336
5670
5670
                                                                                                                                                                                                                                                                                                                                                                     166
612
202
2323
4064
2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3712
1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-072623/06
P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
Canis familiaris,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                    72.2
71.2
70.2
70
                                                                                                                                                                                                                                                                                                                                                                                                                                                         207
203.4
201.8
169
                                                                                                                                                                                                                                                                                                                                                169
150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z5555;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
Z55555
                                                                                                             84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84444

84
                                                                                                                                                  ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            May 13, 2001, 14:28:54 ; Search time 472.02 Seconds (without alignments) 1610.278 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine interleukin
Canine interleukin
Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human low adenosin
Human adenosine re
Human low adenosin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human adenosine re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgnl_8/gcgdata/geneseq/geneseqn/NA1982_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1982_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1984_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1985_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1986_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1986_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1986_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1980_DAT:*
1: /cgnl_8/gcgdata/geneseq/geneseqn/NA1980_DAT:*
2: /cgnl_8/gcgdata/geneseq/geneseqn/NA1980_DAT:*
3: /cgnl_8/gcgdata/geneseq/geneseqn/NA1991_DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgnl_8/gcgdata/geneseqn/Na1992.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/Na1993.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/Na1994.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/Na1995.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/Na1996.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/Na1997.DAT:*/cgnl_8/gcgdata/qeneseqn/nan1997.DAT:*/cgnl_8/gcgdata/qenesen/nan1997.DAT:*/cgnl_8/gcgdata/qenesen/nan1997.DAT:*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgnl_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA2000.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                   1356552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn1_8/gcgdata/geneseq/geneseqn/NA1980.
/cgn1_8/gcgdata/geneseq/geneseqn/NA1981.
               GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                             hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                           678276 segs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                        nucleic search, using sw model
                                                                                                                                                                                                                                                                     IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255555
255566
255561
255562
255562
255557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F21334
A35212
F21332
A35210
Q56692
```

length: 0 length: 2000000000

sed

Minimum DB Maximum DB

rotal number of

Searched:

Perfect score: Sequence: Scoring table:

ritle:

ı

OM nucleic

Run on:

N\_Geneseq\_0401:\*

Database

ID

DB Length

Query Match

Score

Result No.

302 251 251

υ

1302 1302 1269 1269 393 393 1270 1282 1282 1282

```
allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                        sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline FIL-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                    preventing e.g. tumors or autoimmune disease
                          or dogs,
                            from cats
                                                                                                                                                   Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                          Nucleic acids encoding immunoregulatory proteins
                                                                                                    11; Page 229-230; 264pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                    for treating or
                                                                                                    Claim
```

T; 0 other; Sequence 1302 BP; 337 A; 318 C; 340 G; 307

```
ö
                                                                           240
                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                 480
                                       9
                     Gaps
                                                                                                                                                                 1 ctacgacctgcctgctcttccctcgctcctgcattggctctgggctccatggcgctc
                                                                                                                  actccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcag
                                                                                                                                      actecetececaaceeteaaggageteattgaggagetggteaacateaeceagaateag
                                                                                                                                                                                                                                   atgetgaaageactgtgeteteaaaageeeggggaaggeagattteeagtgaacgeage
                                                                                                                                                                                                                                                      gtttatcgccatggaaatttcagatgaagcatgaaacttagcatccttatctgtagacc
                                                                                                                                                                                                                                                                                                                                                             gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc
                                                                                                                                                                                              gcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagagg
                                                                                                                                                                                                                                                                         cgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctatgtaagggga
                                                                                                                                                                                                                                                                                                                                                     cagacctgaccacttaagttccagattcatttttctttccgacgtcacaaatttcttagg
  Length 1302;
                    ö
                   Indels
100.0%; Score 1302; DB 21;
100.0%; Pred. No. 1.4e-264;
ive 0; Mismatches 0;
Query Match 100.
Best Local Similarity 100.
Matches 1302; Conservative
                                                                                              61
                                                                                                                                    121
                                                                            61
                                                                                                                                                                          181
                                                                                                                                                                                                                241
                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                 121
                                                                                                                                                       181
                                                                                                                                                                                             241
                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                         541
                                       ò
                                                       g
                                                                           ò
                                                                                           qq
                                                                                                                δ
                                                                                                                                   q
                                                                                                                                                       ò
                                                                                                                                                                        g
                                                                                                                                                                                            å
                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1200
                                                                                                                               900
                                                                                                                                                            960
              099
                                                                                                                 900
cagagcaaagtgcagcattacagtggaggcagatatgtgtgggagggggtcttgctgtac
                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune respons
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                           ctggggccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgccactca
                                                                                                                                                                                        ctggggccgacacaggggacaggagaaaagggtcagagatgctgctcttgtctgccactca
                                                                                                                                                                                                                                  taaaatatgttatcaaaagagttaataatatatagaagagtagcctaaaaggctgcatttg
                                                                                                                                                                                                                                                               gtgtgtgtggccaggccggggcgggtggggggggggggtgttgtcactgaatgtgctcttt
                                                                                                                                                                                                                                                                     aagtgtetttgttttgtgctggggacagggaagtggettggagetgggggeeccagtgaeteg
                                                                                                                                                                                                                                                                                                                                                                                                                   Canine interleukin-13 (IL-13) clone 80 cDNA complement
                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Canine IL-13 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                         BP
                                                                                                                                                                                                                                                                                                                                                                        Z55556 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product-
                                                                                                                                                                                                                                                                                                                                                                                                                                                      familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                      Z55556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis
                                                                                                                                                                                        961
                                                                                                                                                                                                      1021
                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                      1261
             601
                            661
                                          661
                                                                     721
                                                                                    781
                                                                                                  781
                                                                                                                 841
                                                                                                                                             901
                                                                                                                                                                          961
                                                                                                                                                                                                                                                               1141
                                                        721
                                                                                                                                                                                                                                                                                                                                                          RESULT
255556/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
            g
                                         g
                                                                     셤
                                                                                                  q
                                                                                                                              g
                                                                                                                                                            g
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                        QΩ
                                                                                                                                                                                                                                                                                                                                                                               ð
                                                       οχ
                                                                                    ò
                                                                                                                 δ
                                                                                                                                             ò
                                                                                                                                                                                       pp
                                                                                                                                                                                                     δý
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                         ŏ
```

~

421

δŏ

```
colony stimulating factor (GMCE), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                  preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                canine
                                                                                                                                                                                                                                                                                                                                            Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD40, can feline CD14 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage
                                                                                                                                                                                                                                               encoding immunoregulatory proteins from cats or
                                                                                                                                         Wonderling
                                                                                                                                                                                                                                                                                                      Claim li; Page 231-232; 264pp; English.
                   99WO-US11942
                                                         98US-0087306
                                                                                                                                           Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and in drug targetting.
                                                                                                                                                                                                                                                                  for treating or
                                                                                                                                                                             WPI; 2000-072623/06
                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                         Yang S,
                                                                                                                                                                                                  P-PSDB; Y58221
                                                                                                                                                                                                                                             Nucleic acids
                   28-MAY-1999;
                                                         29-MAY-1998;
                                                                                                                                         <u>ن</u>
                                                                                                                                           Sim
```

 $^{\rm or}$ 

Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;

```
;
0
                                                                                                                                  1123
                                                tggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtg 120
                     Gaps
                                      9
                                                                                      actecetececaaceteaaggageteattgaggagetggteaacateaceeagaateag
                                      1 ctacgacctgcctgctctccctcgctcctgcattggctctgggctccatggcgctc
                                                                                                                                                                                           gcagototagaatototgatcaatgtotocgactgcagcgccatccaaaggacccagagg
Query Match
Best Local Similarity 100.0%; Score 1302; DB 21; Length 1302;
Best Local Similarity 100.0%; Pred. No. 1.4e-264;
Matches 1302; Conservative 0; Mismatches 0; Indels 0;
                   0;
                                                                          61
                                                                                             1242
                                                                                                                                                                       1122
                                                                                                                                                                                                                                                 1002
                                                        1302
                                                                                                                121
                                                                                                                                                     181
                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                   361
                                                                          ò
                                                                                            qq
                                                                                                                ò
                                                                                                                              Dp
                                                                                                                                                   ò
                                                                                                                                                                      g
                                                                                                                                                                                                       qq
                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                   ò
```

immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                        1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaa 1080
                                                                                                                099
                                                                                                                                  643
                                                                                                                                                                                                                               840
                                                                                                                                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                                                                           343
                                      540
                                                                                                                                                                                          780
                                                                                                                                                                                                             523
                                                                                                                                                                                                                                                  463
                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                       403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                            ccatggagetgageecageeaceetgeettggtgeatggggeecageegggggeete
                                                                                                                                  CCATGGAGCTGAGCCCAGCCACCCTTGCTTGGTGCATGGGGCCCAGCCGGGTGGCCCTC
                                                                                                                                                     ctccgtctgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcct
                                                                                                                                                              cagagcaaagtgcagcattacagtggaggcagatatgtgtgggagggggtcttgctgtac
                                                                                                                                                                                                    841 aagtgictitgiitgigciggggacagggagtggctiggagciggggcccagigacicg
                                                                                                                                                                                                                                                                               AAGTGTCTTTGTTTGTGCTGGGGACAGGGACTGGCTTGAACTCG
                                                                                                                                                                                                                                                                                                         ggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                                                                                                                   GCAGCTGGCCCTCAGCCAAGCAGTAATTTATTGTTTTTCCTTGTATTTAAAGTTAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                       taaaatatgttatcaaagagttaataatatatagaagagtagcctaaaaggctgcatttg
                                                                                                                                                                                                                                                                                                                                                                                                                                         TAAAATATGTTATCAAAGAGTTAATAATATAGAAGAGTAGCCTAAAAAGGCTGCATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162 GTGTGTGGCCAGGCCGGGGGGGGGGGGGGGGGTGTTGTCACTGAATGTGCTCTTT
                                                                           cagacctgaccacttaagttccagattcatttttctttccgacgtcacaaatttcttagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55561 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                    282
                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42
                  882
                                     481
                                                       822
                                                                           541
                                                                                             762
                                                                                                              601
                                                                                                                                 702
                                                                                                                                                    199
                                                                                                                                                                     642
                                                                                                                                                                                        721
                                                                                                                                                                                                            582
                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                522
                                                                                                                                                                                                                                                                                     462
                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                           402
                                                                                                                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                               342
                                                                                                                                                                                                                                                                                                                                                                                                                                         222
                                                      a
                                                                                                                                Db
                                                                                                                                                                    g
                                                                                                                                                                                       δ
                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                       δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                          ŏ
                                                                                                              QY
                                                                                                                                                    δy
                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ά
```

```
306
                                                                                           363
                                                                                                                                   423
                                                                                                                                                                                                                   543
           246
                                                                                                                                                                            483
                                                                                                                                                                                                                                                           603
                                                                                                                                                                                                                                                                                                   663
                                                                                                                                                                                                                                                                                                                                          723
                                                                                                                                                                                                                                                                                                                                                                                  783
                                                                                                                                                                                                                                                                                                                                                                                                                          843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                       361
                                                                                                               421
                                                                                                                                                       481
                                                                                                                                                                                                541
                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                             ò
                                              g
                                                                      ò
                                                                                          g
                                                                                                              δý
                                                                                                                                 q
                                                                                                                                                      δ
                                                                                                                                                                           셤
                                                                                                                                                                                               ò
                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                   Sequences 25552-255560 and 255561-25556 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CDAO, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
therefron-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and inclotides may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumnors, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagagg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65
                                                                                                                                                                                                                                       : acids encoding immunoregulatory proteins from cats or dogs, for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gcatccctctgcaacggcatgatgtggagcgtcaacctgaccgccggcatgtactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          э;
Э
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1251; DB 21; Length 1269;
pred. No. 7.1e-254;
0; Mismatches 0; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                            clone
                                                                                                                                                                                     RS;
                                                            1L-13
                                                                                                                                                                                    Wonderling
                                                                                                                                                                                                                                                                   Claim 11; Page 235-236; 264pp; English
                       Location/Qualifiers
57..449
                                                            "Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 99.8%;
Matches 1264; Conservative
                                                                                                                        99WO-US11942
                                                                                                                                                                                     MJ,
                                                                                                                                            98US-0087306
                                                   /*tag= a
/product=
                                        ..449
                                                                                                                                                                                   Yang S, Dreitz
                                                                                                                                                                                                                                      acids encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting
                                                                                                                                                                                                       2000-072623/06
                                                                                                                                                                CORP.
         familiaris
                                                                                                                                                                                                                   P-PSDB; Y58223
                                                                                                                                                                (HESK-) HESKA
                                                                               W09961618-A2
                                                                                                                        28-MAY-1999;
                                                                                                                                            29-MAY-1998;
                                                                                                   02-DEC-1999
                                                                                                                                                                                                                                       Nucleic
                                                                                                                                                                                    Sim G,
                                                                                                                                                                                                                                                 nseful
          Canis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186
                             Key
à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    òγ
```

```
1020
                                                                                                                                                                                                           1022
         360
                                          480
                                                                             9
                                                                                     602
                                                                                             099
                                                                                                      662
                                                                                                              720
                                                                                                                       722
                                                                                                                               780
                                                                                                                                               840
                                                                                                                                                        842
                                                                                                                                                                 900
                                                                                                                                                                                  960
                                                                                                                                                                                          962
                                                                                                                                       782
                                                                                                                                                                         902
        geagetetagaatetetgateaatgteteegaetgeagegeeateeaaaggaeeeagaag
                                                           cagacctgaccacttaagttccagattcatttttttttccgacgtcacaaatttcttagg
                                                                                                              ctccgtctgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcct
                                                                                                                                cagagcaaagtgcagtacagtggaggcagatatgtggggagggggtcttgctgtac
                                                                                                                                                                                                                                                                       aaaaaaa 1267
```

240

actccctccccaacctcaaggagctcattgaggagctggtcaacatcacccagaatcag

121

ŏ

g ò g ò q ò q δ g ò g ŏ g δy 셤 ŏ Dp δy g άŽ a δ Dp ŏ 면 δ qq

181

241

gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc

TGGTTGACTGTGGTCATTGCTCTCACCTGCCTCGGTGGCCTTGCCTCCCCGAGCCCTGTG

300

965

360

gcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagagg

361 907

908

420

848

480

788

540

787

541 727 601 299 661 607 721

481

728

900

668

099 608 720 548 780 488 840

Ŋ

```
Sequences 25552-25560 and 25551-25566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
II-4, canine or feline Fit-3 ligand, canine or feline CDO4, canine or feline CDO4
II-4, canine or feline Fit-3 ligand, canine IL-13, feline
II-4, canine or feline Fit-3 ligand, canine IL-13, feline
CD interferon-alpha (IFW-alpha) and feline granulocyte macrophage
CC interferon-alpha (IFW-alpha)
CC interf
                                                                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
                                                                                                                                                                           Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "Canine IL-13 clone 78'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 11; Page 237-238; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                            complement (821..1213)
/*tag= a
                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                            <u>B</u>P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dreitz MJ,
                    Z55562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                     Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        o,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim
Z55562/c
```

```
1140
                                                                                                     taaaatatgttatcaaagagttaataatatatagaagagtagcctaaaaggctgcatttg
                                                                              ctgggggccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgccactca
                                   gcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaa
                                                                   1081
961
                                                                                                    1141
                                                                                                                      127
                 307
                                  1021
                                                 247
                                                                                   187
ò
               g
                                  à
                                                 g
                                                                  ò
                                                                                   g
```

;;

3; Gaps

Length 1269; Indels

Score 1251; DB 21; Pred. No. 7.1e-254; 0; Mismatches 0;

96.1%; 99.8%;

Best Local Similarity 99.8 Matches 1264; Conservative

à g ò

Query Match

61

68

1020

248

368 960

900

781 487 841 427 901 367

cagagcaaagtgcagcattacagtggaggcagatatgtgtgggagggggtcttgctgtac

ggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc

171

agocottgtgactcoctcocaacoctcaaggagetcattgaggagetggtcaacatcaco

231

cagaatcaggcatcctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccggc

240

351

291

```
232 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                       112
                                                                                                           172
                         g
                                                     ò
                                                                            Db
                                                                                                           ò
                                                                                                                                   g
                                                                                                                                                               QY,
                                                                                                                                                                                        g
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences 25552-25560 and 255561-25556 represent CDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine or feline CDL4 (CD40 ligand), canine or feline CDL54 (CD40 ligand), canine IL-13, feline (IL-4, canine CD154 (CD40 ligand), canine IL-5, canine IL-13, feline colony-stimulating factor (GMSF), and nucleotides which encode these colony-stimulating factor (GMSF), and nucleotides which encode these immunoregulatory proteins. The prophlactic regulation of an immune response in animals (particularly cats, degs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
              Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                            Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 232-233; 264pp; English.
                                                                                                                                                              255557 standard; cDNA; 393 BP
                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HESK-) HESKA CORP.
                                                                  aaaaaaa 1267
                                                                                                                                                                                                                                                                                                                 Cants familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang S,
                                                                                           AAAAAA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; Y58221
                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                              28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ပဲ
            1201
                                                                  1261
                                                                                           7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sim
                                                                                                                                    RESULT
                                                                                                                                                255557
ID Z
                                                                                                                                                                            Db
                                                                ò
                                                                                           g
```

```
Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine LL-4, canine or feline FlL-13 ligand, canine or feline CDO, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
411
                 Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                                              gtaaggggagtttatcgccatggaaatttcaga 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1i; Page 233; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                       255558/c
ID 255558 standard; cDNA; 393
                                                                                                                                                                                                                                    14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                               WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                       Z55558;
352
                                                            412
```

ö

Gaps

.; 0

0; Indels

Ouery Match 30.2%; Score 393; DB 21; Length 393; Best Local Similarity 100.0%; Pred. No. 8.2e-74; Matches 393; Conservative 0; Mismatches 0; Indels

Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions

WPI; 2000-679539/66

Nyce JW;

24-MAR-2000; 2000WO-US08020

26-0CT-2000

99US-0127958 EAST CAROLINA. J W.

(UYEC-) UNIV (NYCE/) NYCE 06-APR-1999;

```
ö
vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antiinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pain; cystic fibrosis; allergic rhinitis; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 411
                                                                                                                                                                                                                                                                                                                                                                                             52 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 111
                                                                                                                                                                                                                                                                                                                                                                                                                                  393 Argecerreregridacrereserratecrerecereceresereserreceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          112 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGTGTGGAGCGTCAACCTGACCGCCGGC 214
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93 GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human low adenosine antisense oligonucleotide related sequence #2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGGCAGGGCAGGATTTCCAGT
                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                            30.2%; Score 393; DB 21; Length 393; 100.0%; Pred. No. 8.2e-74; ive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                 Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtaaggggagtttatcgccatggaaatttcaga 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F21334 standard; DNA; 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                   Matches 393; Conservative
                                                                                                                                                                                                          and in drug targetting.
                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200062736-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2001
                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F21334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F21334
                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8×888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
The present interaction describes now accounts of the antisense oligonucleotides and compositions (1) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (1) can have respiratory, bronchodilator, antiinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (1) can be used to down-regulate the corpression and or activity of target polypeptides associated with ungy/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoslobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, cytokine and chemokines, endogenously produced specific and non-receptors, central nervous system (CNS) and peripheral nervous and non-nervous system peptide receptors, defensins, growth factors, vasoactive peptides and receptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders and/or surfactant hypoproduction which are associated with a disease or condition selected from pulmonary vasoconstriction, inflammation, allergy ies, asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CP), allergic rhinitis (AR), pulmonary ungentension, emphysema, chronic obstructive pulmonary disease (CDD), pulmonary transplantation rejection, pulmonary infections, bronchitis, and and antisense oligonucleotides used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134 ggageteattgaggagetggteaacateacecagaaceagaaggeteegetetgeaatgg 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ggageteattgaggagetggteaacateacceagaate---aggeatectetgeaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cagcatggtgtggagcgtcaacctgaccgccatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290; Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                            present invention describes low adenosine (A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29.0%; Score 378; DB 21;
66.2%; Pred. No. 1.6e-70;
ive 0; Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 1336; 1592pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 66.2
Matches 780; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     258
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

phosphorothioate; impaired respiration; inflammation; allergy; allergy; allergic disease; bronchoconstriction; inhibitor; antinflammatory; antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary bypertension; chronic obstructive pulmonary disease; COPD; cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.

adenosine receptor; low adenosine antisense oligonucleotide;

œ

```
cctgggggcc-----gacacaggggacaggagaaaagggtcagagatgctgctctt 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gictgccactcagcagctggccctcagccaagcagtaaittattgtttttccttgtattt 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1025 cctgggggcctcggaggcttcatccgaggcagggtcaggaggagggggagaacagccgctcct 1084
                                                                                                                                                                                489
                                                                                                                                                      496
                                                                                                                                                                                                                                      549
                                                                                                                                                                                                                                                                  809
                                                                                                                                                                                                                                                                                                                                                                                                                                   769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              373
                                                                                               437
                                                                                                                          433
                                                                                                                                                                                                           551
                                                                                                                                                                                                                                                                                                                       667
                                                                                                                                                                                                                                                                                                                                                   664
                                                                                                                                                                                                                                                                                                                                                                             723
                                                                                                                                                                                                                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                                                                                                                                                                                                                            725 agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt 964
                                                                                                                                                                   254 gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                     374 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaacttttcgcgagggacg
                                                                                                                                                                                                                        378 agigatccagitggigaaaaaccigcicacciatgiaaggggagittaicgccaiggaaa
                                                                                                                                                                                                                                                                ---agecgaecteagectteecettgeecagggeteagectggtgggeetectetgtee
                                                                                                                                                                                                                                                                                                                                                                              ••••tgcacttcatcaacgctgaagggaaagcactgcatcccatgactgtcccttcag
                                                                                                                                                                                                                                                                                                                                                                                                        665 agggecetgageteggtggacceagggatgacatgteetacacceteceetgeeetag
                                                                                                                                                                                                                                                                                                                                                                                                                                   agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----gagtccctggggaataagcactgtgtgtaaaattctgctacctcactgggat
ctctcaaaaagcccgcggcagggcagattccagtgaacgcaggccgagacaccaaaattga
                                                                                                                                                    438 tttcagatgaagcatgaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                           agttccagattcatttttttttccgacgtcacaaatttcttagggaggtggggg-----
                                                                                                                                                                                                                                                                                            550 ttagggagggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                         ctgagcccagccacccttgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --gcttggagctgggggcccagtgactcgggtttaga-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                       609
                                                                                                                                                                                                                                                                                                                                                                             668
                                        318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                 609
                                                                                                                                                                                                                                                                                                                                                                                                                                   724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1009
            음
                                                                g
                                                                                                                       g
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                        ò
                                                                                             ò
                                                                                                                                                   à
                                                                                                                                                                           g
                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or

99WO-US17712 98US-0095212

03-AUG-1999; 03-AUG-1998;

24-FEB-2000

WO200009525-A2 Homo sapiens

(UYEC-) UNIV EAST CAROLINA.

WPI; 2000-205971/18.

Nyce JW;

present invention describes a new composition comprising

Disclosure; Page 1251-1252; 1343pp; English.

```
asthma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from the previously named sequences. SEQ ID NO:11 to 1680 (A32323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               impaired alrways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthimpeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (CODD), and cancers such as leukemias, lymphomas, carcinomas, and cancers which may metastasise to the lungs, including breast and prostate cancer. The reduction of the adenosine content of ONS reduces side effects. The A-containing ONS break down with the release of deoxyadenosine which activates adenosine receptors causing bronchoconstriction and inflammation. A33313 to A33312 represent the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleotide sequences given in the sequence listing from the present invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185 sequences are also called SEQ ID NO:1 to 185, but the sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oligonuclectide (ON) with low adenosine (up to 15%), which targets nucleic acids involved in bronchoconstriction, allergies, and/or inflammation. The ON can have antiinflammatory, antiallergie, antialsthmatic, cytostatic and analgesic activities. The compositions useful for the treatment of diseases associated with inflammation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ceteaateeteteetgttggeaetgggeeteatggegettttgttgaceaeggteattge 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to A33992) are specifically claimed ONS from the present invention. N.B. Sequences given in the disclosure of the present invention do match up with their corresponding SEQ ID NO: sequences given in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 378; DB 21;
Pred. No. 1.6e-70;
); Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29.0%;
66.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 66.2
Matches 780; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence listing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              match up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           differ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74
αg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

the

12;

Human adenosine receptor related polynucleotide 2nd SEQ ID NO:86.

(first entry)

28-JUL-2000 A35212;

EXTXAXU

ВР

A35212 standard; DNA; 1270

σ

RESULT

```
1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                               816
                    193
                                         257
                                                           253
                                                                                 317
                                                                                                    313
                                                                                                                          377
                                                                                                                                             373
                                                                                                                                                                   437
                                                                                                                                                                                      433
                                                                                                                                                                                                           496
                                                                                                                                                                                                                               489
                                                                                                                                                                                                                                                    551
                                                                                                                                                                                                                                                                       549
                                                                                                                                                                                                                                                                                            608
                                                                                                                                                                                                                                                                                                                                      299
                                                                                                                                                                                                                                                                                                                                                         664
                                                                                                                                                                                                                                                                                                                                                                             723
                                                                                                                                                                                                                                                                                                                                                                                                  724
                                                                                                                                                                                                                                                                                                                                                                                                                      769
                                                                                                                                                                                                                                                                                                                                                                                                                                           784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9tctgccactcagcagctggcctcagccaagcagtaatttattgtttttccttgtattt
         cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                  gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                     gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                                                                                         ctctcaaaaagcccgcggcagggcagattccagtgaacgcagccgagacaccaaaattga
                                                                                                                                     agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                              ••••agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                  cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tttattattgtgtgttatttaaatgagtgtgtttgtcaccgttgggggattggggaagact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtggctgctggcacttggagccaagggttcagagctcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----gagtccctgggaataagcactgtgtgtaaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgcttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cctggggcctcggagcctcatccgaggcagggtcaggagggggggagaacagccgctcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggageteattgaggagetggtcaacateacecagaate---aggeateetetgeaaegg
                                                                                                                                                                                                                                                   agttecagatteatttttettteegaegteacaaatttettagggaggtggggg----
                                                                                                                                                                                                                                                                                                                 ttagggagggggaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                             ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                  agggccctgagctcggtggacccaggggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                               •••••----tcttgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----gcttggagctgggggcccagtgactcgggtttaga-------
                                                                                                                                                                                                                                                                                                                                                                                                                      agcaaagtgcagcattacagtggagg-----cagatatgtggggaggggg
                                                                                           aaagttaagaaataaaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1085
141
                  134
                                      198
                                                           194
                                                                                258
                                                                                                    254
                                                                                                                         318
                                                                                                                                             31.4
                                                                                                                                                                  378
                                                                                                                                                                                     374
                                                                                                                                                                                                          438
                                                                                                                                                                                                                              434
                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                    609
                                                                                                                                                                                                                                                                                                                                                         609
                                                                                                                                                                                                                                                                                                                                                                                                  665
                                                                                                                                                                                                                                                                                                                                                                                                                     724
                                                                                                                                                                                                                                                                                                                                                                                                                                          725
                                                                                                                                                                                                                                                                                                                                                                                                                                                              770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1009
                                                                                                                                                                                                                                                   497
                                                                                                                                                                                                                                                                                           552
                                                                                                                                                                                                                                                                                                                                                                             899
                q
                                                       g
                                                                                                                                         Q
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                     ò
                                                                              ò
                                                                                              QQ
                                                                                                                       ò
                                                                                                                                                                 õ
                                                                                                                                                                                g
                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Op
```

pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragments and antisense oligonucleotides used in the exemplification of the

hypertension, emphysema, chronic obstructive pulmonary disease (COPD), condition selected from pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, respiratory distress syndrome

pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary

(RDS),

aa-----atattaaatatgttagcaaagagttaata 1175

```
The present invention describes low adenosine (A) content antisense oligonucleotides and compositions (I) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (I) can have respiratory, bronchodilator, antiinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (I) can be used to down-requiate the expression and or activity of target polyapeptides associated with lung/respiratory disorders and malignancies, such as stimulating and activity of target polyapeptides associated with lung/respiratory disorders and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokine receptors, adenosine molecules and their receptors, cytokine and chemokine receptors, adenosine receptors, bradykinin receptors, central nervous system (CNS) and peripheral nervous and non-nervous system peptide transmitters, defensine, growth factors, vasoactive peptides and receptors, briding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction (especially pulmonary obstruction and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or surfactorthy hypoproduction which are associated proteins and manignancy associated proteins and manignancy associated proteins and antised or antiseratory obstruction (especially pulmonary obstruction and/or surfactorh place associated view and antised proteins and antised and antised and and/or surfactorh place associated with a disease or condition and antised and a
                                                                                                                                                                                                                                                                                                                                             respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating
                                                                                                                                                                                                                                      Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; alrway disorder; bronchocomstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antiinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
                                                                                                                                                                                    Human low adenosine antisense oligonucleotide related sequence #2899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 1333-1334; 1592pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancers and respiratory obstructions
                         ВР.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-MAR-2000; 2000WO-US08020.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYEC-) UNIV EAST CAROLINA. (NYCE/) NYCE J W.
                      F21332 standard; DNA; 1282
                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-679539/66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200062736-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-APR-1999;
                                                                                                                            14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nyce JW;
                                                                           F21332
721332
```

10

Mon

```
12;
                                                                                                                                                                                                               205
                                                                                                                                                                                                                                      257
                                                                                                                                                                                                                                                                                                                                                                                               445
                                                                                                                                                                                                                                                                                                                                                                                                                     496
                                                                                                                                              197
                                                                                                                                                                                                                                                                                                      325
                                                                                                                                                                                                                                                                                                                            377
                                                                                                                                                                                                                                                                                                                                                                          437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   723
                                                                            Gaps
                                                                                                561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     teteaettgeettggeggetttgeetececaggeeetgtgeetecetetacageeeteag
                                                                                                                                                                                          ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg
                                                                                                                                                                                                                                      cagoatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                           cagcatggtatggagcatcaacctgacagctggcatgtactgtgcagccctggaatccct
                                                                                                                                                                                                                                                                                             agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc
                                                                                                                                                                                                              146 ggagctcattgaggagctggtcaacatcacccagaaccagaaggctccgctctgcaatgg
                                                                                                                                                                                                                                                                                  gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                        378 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                             386 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaactttttcgcgagggacg
                                                                                                                                                                                                                                                                                                                                                                                                                    tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                         gttcaactgaaacttcgaa----agcatcattatttgcagagacaggacctgactattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agttccagattcattttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctgagcccagccacccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      677 agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cacttcacacagggaactgaggcagacagcagctcaggcacacttcttggtctta
                                                                                                                                                                                                                                                                                                                            ctctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          •------tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                            108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg
                                                       Length 1282;
                                                                            Indels
                      0 other;
                                                                          290;
                                                     Score 378; DB 21;
Pred. No. 1.6e-70;
0; Mismatches 290;
                      ;;
                      311
                      ë:
                      C; 337
                                                                            .
0
                      341
                                                    29.0%;
Similarity 66.2%;
O; Conservative
                      Ą;
                      . Sequence 1282 BP; 293
present invention
                                                       Mac
Local Sar.
780;
                                                     Query Match
Best Local S:
Matches 780)
                                                                                                                                                                 98
                                                                                                                                            81
                                                                                                                                                                                                                                                          206
                                                                                                                                                                                                                                                                                                                            318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  737
                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            857
SXS
                                                                                                                     g
                                                                                                                                                                Q
                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                            ò
                                                                                                                                                                                       à
                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
The present invention describes a new composition comprising an antisense coligonuclectide (NON) with low adenosine (up to 15%), which targets uncleic acids involved in bronchoconstriction, allergies, and/or inflammation. The ON can have antiinflammatory, antiallergic, antiasthmatic, cytostatic and analgesic activities. The compositions are useful for the treatment of diseases associated with inflammation, impaired airways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating effects afflict the lungs of a subject. They can be used for treating effects afflict the lungs of a subject. They can be used for treating impeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary Hypertension, emphysema, chronic obstructive could for the composition and cancers which may metastasise to the lungs, including breast and prostate cancer. The reduction of the adenosine content of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phosphorothioate; impaired respiration; infilammation; allergy; allergy; allergy; allergy; antiastheonstriction; inhibitor; antianfammatory; antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischaemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD; cancer; leukaemia; lymphoma; carcinoma; metaatasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; adenosine receptor; low adenosine antisense oligonucleotide;
---gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                           ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactgggggt
                                                                                                                                                 gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
                                                                         .---gacacaggggacaggagagagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       adenosine receptor related polynucleotide 2nd SEQ ID NO:84
                                                                                                                                                                                                                           aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                             Disclosure; Page 1249-1250; 1343pp; English.
                                                                                                                                                                                                                                                                                                                                                          ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0095212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US17712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EAST CAROLINA.
                                                                                                                                                                                                                                                                                                                                                        A35210 standard; DNA; 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                  28-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-205971/18.
                                                                       cctddddcc----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200009525-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UYEC-) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-FEB-2000
                                                                                                                                                                                                                                                              aa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nyce JW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancers
                                                                                                                                                                                                                                                                                                                                                                                             A35210;
                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human
                                                                                                                                                                                                                       1069
                                 977
                                                                                                                                                 1009
                                                                                                                                                                                    1097
                                                                                                                                                                                                                                                            1157
                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo
                                 g
                                                                                                       Db
                                                                                                                                               ò
                                                                                                                                                                                  a
                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
(A32323
ONs reduces side effects. The A-containing ONs break down with the release of deoxyadenosine which activates adenosine receptors causing bronchoconstriction and inflammation. A32313 to A35312 represent the nucleotide sequences given in the sequence listing from the present invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185 sequences are also called SEQ ID NO:1 to 2815, and then the last of A3392) are specifically claimed over sequences. SEQ ID NO:11 to 1680 (A3232 to A3392) are specifically claimed ONs from the present invention. Wh. Sequences given in the disclosure of the present invention. Match up with their corresponding SEQ ID NO: sequences given in the sequence listing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1282 BP; 293 A; 341 C; 337 G; 311 T; 0 other;
```

```
g
                                                                                                 a
                                                                                                                                                                                                                                                   a
                                                  δ
                                                                                  à
                                                                                                                  ŏ
                                                                                                                                  qq
                                                                                                                                                                g
                                                                                                                                                                                   ò
                                                                                                                                                                                                 g
                 ò
                                                                                                                                          12;
                                                                                                                                                                                          teteacetgeeteggtggeettgeeteceegageeetgtgaeteeeteeeaaceeteaa 140
                                                                                                                                                                                                  445
                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         769
                                                                                                                                                                                                                          ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg 197
                                                                                                                                                                                                                                                         257
                                                                                                                                                                                                                                                                         265
                                                                                                                                                                                                                                                                                          317
                                                                                                                                                                                                                                                                                                         325
                                                                                                                                                                                                                                                                                                                         377
                                                                                                                                                                                                                                                                                                                                         385
                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                                                                                                                                                          551
                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                         608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------tettgetgtacetggagtggeacagacatgtttettettageetta 816
                                                                                                                                           Gaps
                                                                                                                                                                         82
                                                                                                                                                         21 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 80
                                                                                                                                                                                                                                                        ceteaatectetetgttggcactgggceteatggcgcttttgttgaccacggtcattge
                                                                                                                                                                                                                                  gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                        gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                                                                                                                                                                                                                                                                                        ctctcaaaagcccgcggcagggcagatttccagtgaacgcagcgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                        cccgcacaaggtctcagctgggcagtttccagcttgcatgtccgagacaccaaaatcga
                                                                                                                                                                                                                                                                                                                                                        agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                         ggtggcccagtttgtaaaggacctgctcttacatttaaagaaacttttcgcgagggacg
                                                                                                                                                                                                                                                                                                                                                                                        tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                         agttgcagattcatttttcttctgatgtcaaaaatgtcttgggtaggcgggaaggaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                         agttocagattcatttttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctgagcccagccacccctgccttggtgcatggggcccagccgggggtggcctcctccgtc-
                                                                                                                                         108;
                                                                                                                         Score 378; DB 21; Length 1282; Pred. No. 1.6e-70;
                                                                                                                                         Indels
                                                                                                                                         290;
                                                                                                                                         0; Mismatches
                                                                                                                        29.0%;
                                                                                                                                         Conservative
                                                                                                                      Query Match
Best Local Similarity
Matches 780; Conserv
                                                                                                                                                                                         81
                                                                                                                                                                                                        98
                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                        146
                                                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                                         206
                                                                                                                                                                                                                                                                                         258
                                                                                                                                                                                                                                                                                                        566
                                                                                                                                                                                                                                                                                                                        318
                                                                                                                                                                                                                                                                                                                                       326
                                                                                                                                                                                                                                                                                                                                                                         386
                                                                                                                                                                                                                                                                                                                                                                                                        446
                                                                                                                                                                                                                                                                                                                                                                                                                        497
                                                                                                                                                                                                                                                                                                                                                                                                                                        502
                                                                                                                                                                                                                                                                                                                                                                                                                                                        552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        621
88888888888888
                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                         à
                                                                                                                                                                                         ò
                                                                                                                                                                                                       g
                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt 1068
                                                                                                                                                                                                                                                                                           cctgggggcc-----gacacaggggacaggagaaaagggtcagagatgctgctctt 1008
                                                                                                                                                                                                                                                                                                                                                                                                               1097 gtctgccagccagcagccagctctcagccaacgagtaatttattgtttttcctcgtattt 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA,
                                                           -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                 1037 cctgggggcctcggagcctcatccgaggcagggtcaggagagggggagaacagccgctcct
  cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                        ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   - obtd. using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunological disorder; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cooks
                                                                                                                        ------gettggagetgggggeccagtgaetegggtttaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Banchereau J, Briere F, Coffman RL, C
, Dang W, De Vries J, De Waal Malefyt
M, Heath A, McKenzie A, Punnonen J, Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                          aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1157 aa-----atattaaatatgttagcaaagagttaata 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Purified interleukin-13 proteins and antibodies mouse gene encoding related protein P600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence encoding human interleukin-13 (IL-13).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 126-127; 135pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q56692 standard; cDNA; 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin-13; lymphokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93WO-US07645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1994-083197/10.
P-PSDB; R48624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Culpepper,
Doherty TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-AUG-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-JAN-1993;
01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnostic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9404680-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aversa G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1069
                                                                                857
                                                                                                                                                                                                                                                                                           096
                                                                                                                                                                                                                                                                                                                                                                         1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
                                        817
                                                                                                                        874
                                                                                                                                                                                                        606
797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256692
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     809
                                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                              313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         197
                                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                            257
                                                                                                                                                                                                                                                                                                  253
                                                                                                                                                                                                                                                                                                                                                                    377
                                                                                                                                                                                                                                                                                                                                                                                        373
                                                                                                                                                                                                                                                                                                                                                                                                               551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873
                                                                                                                                                                                                        teteaettgeettggeggetttgeeteeceaggeeetgtgeeteeetetaeageeeteag 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         904
                                                                                                                 Gaps
                                                                                                                                      2.1 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 80
                                                                                                                                                           ceteaatectetetetgttggcactgggceteatggcgcttttgttgaccacggtcattge 73
                                                                                                                                                                                                                                                                                                                                                                   was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced.
                                                                                                                                                                                                                                             374 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaacttttcgcgagggacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141 ggagetcattgaggagetggtcaacatcacceagaate---aggeatecetetgeaaegg
                                                                                                                                                                                                                                                                             cageatggtgtggagegteaacetgacegeegtgtactgegeagetetet
                                                                                                                                                                                                                                                                                                                       gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                             254 gatcaacgigtcaggcigcagigccaicgagaagacccagaggaigcigagcggaitcig
                                                                                                                                                                                                                                                                                                                                                                                                                                                            tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tragggaggggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             668 ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agcaaagtgcagcattacagtggagg-----cagatatgtgggaggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agttccagattcattttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctgagcccagccacccttgcttggtgcatggggcccagccgggtggcctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---gcttggagctgggggccagtgactcgggtttaga------
                                                                                                                 108;
                                                                                         Length 1290;
                                                                                     Score 378; DB 15; Length 12
Pred. No. 1.6e-70;
n: Mismatches 290; Indels
                                                                                                                                                                                                                                                                                                                                   Sequence 1290 BP; 308 A; 335 C; 336 G; 311 T; 0 other;
                                                                                                                0; Mismatches
                                                                                                                                                                                                =
=
=
=
=
=
                                   This sequence encodes human IL-13
                                                                                         29.0%;
66.2%;
                                                                                                     Best Local Similarity 66.2
Matches 780; Conservative
                                                                                          Query Match
                        clone,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    552
                                                                                                                                                           14
                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                609
                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                       258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
8888888
                                                                                                                                                         Q
                                                                                                                                       ò
                                                                                                                                                                                  õ
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation: surfactant depletion; respiratory; bronchodilator; antihifalmmatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oligonucleotides and compositions (1) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (1) can have respiratory, bronchodilator, antinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (1) can be used to down-regulate the expression and or activity of target polypeptides associated with lung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -
                                                                                                                                  1084
                                                                 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human low adenosine antisense oligonucleotide related sequence #2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     present invention describes low adenosine (A) content antisense
                                                                                                                                                                gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                  -----gagtccctgggaataagcactgtgtaaaaattctgctacctcactgggat
                                                                                                 cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                  aa----atattaaatatgttagcaaagagttaata 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 1334-1335; 1592pp; English.
                                                                                                                                                                                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-MAR-2000; 2000WO-US08020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0127958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  UNIV EAST CAROLINA. NYCE J W.
                                                                                                                                                                                                                                                                                                                                                    6952
                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                  F21333 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-679539/66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200062736-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYEC-) UNIV
(NYCE/) NYCE
                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nyce JW;
                                                                                                                                                                                                                                                                                                                                                                                   F21333;
                                                                                                                                                                                                                                                                                                                  RESULT 12
                                                                                                                                                                                                                                 1069
                                                                                                 096
                                                                                                                                  1025
                                                                                                                                                                                                                                                                  1145
905
                                606
                                                                 965
g
                                ŏ
                                                             g
                                                                                               ò
                                                                                                                              g
                                                                                                                                                                  δy
                                                                                                                                                                                            g
                                                                                                                                                                                                                              O.Y
```

chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adeasion molecules and their receptors, cytokine and chemokine receptors, adenosine receptors, bradykinin receptors, cytokine and chemokine receptors, adenosine receptors, bradykinin receptors, central nervous system (CNS) and peripheral nervous and non-nervous system peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, defensins, growth factors, vasoactive peptides and receptors, binding proteins and mallipansory associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction (especially pulmonary obstruction and/or lung inflammation, allergy(ies) and/or surfactant hypoproduction which are associated with a disease or condition selected from pulmonary vasoconstriction, inflammation, allergy from pulmonary vasoconstriction, inflammation, condition selected from pulmonary vasoconstriction, inflammation, hypoproduction condition selected from pulmonary vasoconstriction, inflammation, condition establishmate (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (CODE), pulmonary transplantation rejection, pulmonary infections, bronchitis, and one constructive pulmonary infections, bronchitis, and antisense oligonucleotides used in the exemplification of the present invention. 

Sequence 6952 BP; 1536 A; 2017 C; 1919 G; 1480 T; 0 other;

12; 5755 5815 6055 6171 cagcatggtatggagcatcaacctgacagctggcatgtactgtgcagccctggaatccct 5935 ---agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctctgtcc 6346 257 437 496 197 317 377 80 Gaps cctcaatcctctcctgttggcactgggcctcatggcgcttttgttgaccacggtcattgc ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg ggageteattgaggagetggteaacateacceagaaccagaaggeteegetetgeaatgg cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg ctctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga ggtggcccagtttgtaaaggacctgctcttacatttaaagaaacttttcgcgagggacg agttgcagattcatttttctttctgatgtcaaaaatgtcttgggtaggcgggaaggaggg ttagggaggggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcctagtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 438 tttcagatgaagcatgaaacttagcatccttatctgtagaccca-gacctgaccactta agttccagattcattttctttccgacgtcacaaatttcttagggaggtgggggg---ctgagcccagccacccttgcttggtgcatggggcccagccgggtggcctcctccgtc-Indels 108; Length 6952; Score 378; DB 21; I Pred. No. 2.7e-70; 0; Mismatches 290; 29.0%; Query Match
Best Local Similarity 66.2° 2696 5816 5756 5876 5936 2996 9509 552 81 141 198 258 318 378 497 609 6291 ₽ 20. ò Db q g ò g à qq ò g ð g ò Q õ ð ογ g ò ò

----tycacttcatcaacgctyayyyaaaycactycatcccatyactytcccctcctcag 723

```
6586
                                                                                                                                                                                                                                                                                                                                                                                                             Human; adenosine receptor; low adenosine antisense oligonucleotide; phosphorothicate; impaired respiration; inflammation; allergy; allergic disease; bronchoconstriction; inhibitor; antinflammatory; antiallergic antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischaemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; path; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD; cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
6347 agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag 6406
                                                                                                                                                cctggggcc----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
                                                         6407 agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc
                                                                                                                   6467 cacttcacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                         6587 gtggctgctgcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                             agcaaagtgcagcattacagtggagg-----cagatatgtgtgtgggagggg----
                                                                                        ---tcttgctgtacctgggagtggcacagacatgttcttcttcttagcctta
                                                                                                                                                                                                                                                                        -----gagtccctgggaataagcactgtgtgtaaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human adenosine receptor related polynucleotide 2nd SEQ ID NO:85.
                                                                                                                                                                                                                ----gcttggagctgggggcccagtgactcgggtttaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1069 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US17712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0095212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A35211 standard; DNA; 6952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UYEC-) UNIV EAST CAROLINA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-205971/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AO200009525-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nyce JW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A35211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
A352:11
                                                                                                                                                                                                                                                                                                                                  096
                                                                                                                                                                                                                                                                                                                                                              6707
                                                                                                                                                                                                                                                                                                                                                                                            1009
                                                                                                                                                                                                                                                                       606
                             724
9
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                      qq
                                                                                       ò
                                                                                                                 g
                                                                                                                                                  à
                                                                                                                                                                           g
                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

```
inclear acids involved in bronchoconstriction, allergies, and/or inflammation. The Own can have antinflammatory, antialiergic.
Inflammation. The Own can have antinflammatory, antialiergic.
Inflammation. The Own can have antinflammatory, antialiergic.
Inflammation to can have antinflammatory, antialiergic.
Impaired airways, including lung disease associated with inflammation, impaired airways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating e.g. ischaemic conditions, pulmonary vasconstriction, allergies, asthma, impeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (CODD), and cancers such as leukaemias, lymphomas, carcinomas, and cancers which may metastasise to the lungs, including breast and prostate cancer. The reduction of the adenosine content of the content of content of the conten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              release of decxyadenosine which activates adenosine receptors causing bronchoconstriction and inflammation. A32313 to A35312 represent the bronchoconstriction and inflammation. A32313 to A35312 represent the involection sequences jiven in the sequence listing from the present invention, which correspond to SEO ID NO:1 to 2815, and then the last 185 sequences are also called SEO ID NO:1 to 185, but the sequences of iffer from the previously named sequences. SEO ID NO:11 to 1680 (A32323 to A33992) are specifically claimed ONs from the present invention.

N.B. Sequences given in the disclosure of the present invention do not match up with their corresponding SEO ID NO: sequences given in the
emphysema, respiratory distress syndrome, ischemia or
                                                                                                                                                                                                                                        present invention describes a new composition
                                                                                                                                Disclosure; Page 1250-1251; 1343pp; English
bronchitis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sedneuce
```

Sequence 6952 BP; 1536 A; 2017 C; 1919 G; 1480 T; 0 other;

```
12;
                                                                                                                                                          5756 tetemettgeettggeggetttgeeteeeemageeetgtgeeteeetetmemgeeetemg 5815
                                                                                                                                                                                                                                                                      5696 ceteaateeteetgettggeaetgggeeteggegeetggegettttgttgaeeaeggteattge 5755
                                                                                                                                                                                                                       5816 ggagoticatigaggagotiggicaacatcacocagaaccagaaggoticogotitigoaatgg 5875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gttcaactgaaacttcgaa----agcatcattatttgcagagacaggacctgactattga 6171
                                                                                                                            teteacetgeeteggtggeettgeeteecegageeetgtgaeteeeteecaaeceteaa 140
                                                              21 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 80
                                                                                                                                                                                           ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg
                                                                                                                                                                                                                                                         cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                     378 agigatocagitiggigaaaaaccigotcacciatgiaaggggagittatogccaiggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agttccagattcatttttttttccgacgtcacaaatttcttagggaagtgggggg----
                                                                                                                                                                                                                                                                                                                      gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                   ctctcaaaaagcccgcggcagggcagatttccagtgaacgccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                438 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca.gacctgaccactta
Length 6952;
                                290; Indels
Score 378; DB 21;
Pred. No. 2.7e-70;
0; Mismatches 290;
29.0%;
ilarity 66.2%;
Conservative
                Local Similarity
es 780; Conserv
   Query Match
                Best Loca
Matches
                                                                                                                            81
                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                   318
                                                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            497
                                                                                                                                                       qq
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                            ô
                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
```

F21338 standard; DNA; 14978

RESULT 14

14-MAR-2001 (first entry)

```
gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt 1068
                                                                                                                                                                                                                              816
                          ttagggaggggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                    6587 gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                              6647 ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt
                                                                                 ----agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                               ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctag
                                                                                                                                         6347 agggccctgagctcggtggacccaggggatgacatgtccctacacccctcccctag
                                                                                                                                                                                                                              ------tcttgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                            cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6707 cctggggcctcggagcctcatccgaggcagggtcaggagagggggagaacagccgctcct
                                                        ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                             ------gcttggagctgggggcccagtgactcgggtttaga------
                                                                                                                                                                                                                                                                                                                                                                                                     -----gagtccctgggaataagcactgtgtaaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1069 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6827 aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1009
                                                     609
                                                                                                                                                                                                                                                                                     817
                                                                                                                                                                                                                                                                                                                 6527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6767
                                                                                                                                                                                                                                                                                                                                                                                                  606
                                                                                                                                                                                                                                                                                                                                                                                                                                                            096
                       qq
                                                   ò
                                                                              g
                                                                                                            ò
                                                                                                                                      g
                                                                                                                                                                    δ
                                                                                                                                                                                                g
                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antiinflammatory; immunosuppressive; antlasthmatic; analgesic; hypotensive; cytostatic;
                                                                                                   Human low adenosine antisense oligonucleotide related sequence #2905
                                                                                                                                             Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
                                                                                                                                                                                                                                                                                                                                cancer; ss
```

WO200062736-A2 Homo sapiens 26-OCT-2000 ctctcaaaaagcccgcggcagggcagatttccagtgaacgcaggccgagacaccaaaattga

318

```
The present invention describes low adenosine (A) content antisense oligonucleotides and compositions (I) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (I) can have respiratory, bronchodialtor, antiinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (I) can be used to down-regulate the expression and or activity of target polypeptides associated with lung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, cytokine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chemokine receptors, adenosine receptors, bradykinin receptors, central nervous system (CNS) and peripheral nervous and non-nervous system transmitters, CNS and peripheral nervous and non-nervous system peptide transmitters, defensins, growth nervous and non-nervous system peptide receptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction (especially pulmonary obstruction and/or bronchoconstriction) and/or ling inflammation, allergy(ies) and/or surfactant hypoproduction which are associated with a disease or
                                                                                                                                                                                                                                              trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        condition selected from pulmonary vasoconstriction, inflammation, allergiaes, asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragmen and antisense oligonucleotides used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14978 BP; 3793 A; 3676 C; 3696 G; 3813 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 1339-1343; 1592pp; English
24-MAR-2000; 2000WO-US08020
                                                99US-0127958
                                                                                                EAST CAROLINA
                                                                                                                                                                                                                       WPI; 2000-679539/66.
                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     present invention
                                                06-APR-1999;
                                                                                                (UYEC-) UNIV
                                                                                                                         NYCE
                                                                                                                       (NYCE/)
                                                                                                                                                                       Nyce JW;
```

```
0
                                                                                                                                            qq
                              ò
                                               a
                                                                  οy
                                                                                     a
                    12;
                                                                           133
                                                                                                                197
                                                                                                                                   193
                                                                                                                                                     257
                                                                                                                                                                                          317
                                                                                                                                                                                                          gatcaacgigicaggeigeagigecategagaagaeceagaggaigeigageggaiteig 313
                                      80
                                              cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                               cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcgcagctctagaatctct
                                                                                     cageatggtatggageateaacetgaeagetggeatgtaetgtgeageeetggaateeet
                                                                                                                                                                                        gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
29.0%; Score 378; DB 21; Length 14978; 66.2%; Pred. No. 3.3e-70; 1ve 0; Mismatches 290; Indels 108;
                   Conservative
          Similarity
  Ma.
Local S.
780;
 Query Match
                  Matches
                                                       14
                                                                          81
                                                                                          74
                                                                                                                141
                                                                                                                                 134
                                                                                                                                                   198
                                                                                                                                                                     194
                                                                                                                                                                                                           254
```

do Qy QQ

ò

g

ò

g

ò

```
ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             373
                                        437
                                                                                                                         gttcaactgaaacttcgaa----agcatcattatttgcagagacaggacctgactattga 489
                                                                                                                                                     551
                                                                                                                                                                                                                                        608
                                                                                                                                                                                                                                                                   667
                                                                                                                                                                                                                                                                                               664
                                                                                                                                                                                                                                                                                                                          723
                                                                                                                                                                                                                                                                                                                                                                                  769
                                                                                                                                                                                                                                                                                                                                                                                                                                         816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      908
                                                                                                                                                                                                                                                                                                                                                     724
                                                                                                                                                                                                                                                                                                                                                                                                            784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; adenosine receptor; low adenosine antisense oligonucleotide;
                                                                                                                                                                                                                                                                                                                                                                                             tttattattgtgtgttatttaaatgagtgtgtttgtcaccgttgggggattggggaagact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cctgggggc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
374 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaactttttcgcgagggacg
                                                                                                                                                                   ---agcogacotcagcottccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                                                                                                                                                                                                                                          ----tgcacttcatcaacgctgaaggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                  agcaaagtgcagcattacagtggagg-----cagatatgtgtgtgggagggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                       •••----tottgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                       378 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                               tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                            agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----gcttggagctgggggccagtgactcgggtttaga-----gcttggactggggtttaga
                                                                                                                                                                                                                                                                   ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human adenosine receptor related polynucleotide 2nd SEQ ID NO:90.
                                                                                                                                                    agttccagattcatttttctttccgacgtcacaaatttcttagggaggtgggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1069 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A35216 standard; DNA; 14978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A35216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
             314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
                                                                                               438
                                                                                                                                                                                                            552
                                                                                                                                                                                                                                                                  609
                                                                                                                                                                                                                                                                                                                                                                                724
                                                                                                                                                                                                                                                                                                                                                                                                                                       770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              817
                                                                                                                                                     497
                                                                                                                                                                                                                                                                                             609
                                                                                                                                                                                                                                                                                                                         899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A35216
                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
           염
                                        δ
                                                               Q
                                                                                              δ
                                                                                                                        셤
                                                                                                                                                    ò
                                                                                                                                                                              Ob
                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
```

```
phosphorothioate; impaired respiration; inflammation; allergy; allergic disease; bronchoconstriction; inhibitor; antiinflammatory; antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischemnic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
                                                                                                                                                                                                                                                               New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or
                                                                 cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
                                                                                                                                                                                                                                                                                                                    Disclosure; Page 1255-1259; 1343pp; English.
                                                                                                                                                      99WO-US17712
                                                                                                                                                                          98US-0095212
                                                                                                                                                                                                 EAST CAROLINA
                                                                                                                                                                                                                                          WPI; 2000-205971/18
                                                                                                           WO200009525-A2
                                                                                        Homo saplens.
                                                                                                                                                                                                 (UYEC-) UNIV
                                                                                                                                                     03-AUG-1999;
                                                                                                                                                                            03-AUG-1998;
                                                                                                                                 24-FEB-2000
                                                                                                                                                                                                                      Nyce JW;
                                                                                                                                                                                                                                                                                                cancers
```

The present invention describes a new composition comprising an antisense oligonuclectide (ON) with low adenosine (up to 15%), which targets conclider acids involved in bronchoconstriction, allergies, and/or inflammation. The ON can have antiinflammatory, antiallergic, and/or can tasthmatic, cytostatic and analgesic activities. The compositions are useful for the treatment of diseases associated with inflammation, impaired alrays, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating cin greated respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary disease (COPD), and cancers such as leukaemias, lymphomas, carcinomas, and cancers which may metastasise to the lungs, including breast and prostate cancer. The reduction of the adenosine content of the construction and inflammation. A3213 to A35312 represent the conclosing which activates adenosine receptors causing conclosing which activates adenosine receptors causing conclosing which correspond to SEQ ID NO:1 to 2815, and then the last invention, which correspond to SEQ ID NO:1 to 2815, and then the last conclosing are also called SEQ ID NO:1 to 2815, and then the last conclosing the previously named sequences. SEQ ID NO:1 to 185, but the sequences of differ from the previously named sequences. SEQ ID NO:1 to 185, and then the last conclosing the specifically claimed ONs from the present invention of the concept of the present invention of not concept and in the disclosure of the present invention of not concept and in the disclosure of the present invention of the concept and in the disclosure of the present invention of the concept and in the conceptor of the present invention of the conceptor and the conceptor of the conceptor and the conceptor match up with the sequence listing.

Sequence 14978 BP; 3793 A; 3676 C; 3696 G; 3813 T; 0 other;

```
12;
                                                                                                  tctcacctgcctcggtggccttgcctccccgagccctgtgactcctccccaacctcaa 140
                                                                                                                             Gaps
                                                   80
                                                                           ceteaatectetetetggeactgggeeteatggegettttgttgaeeaeggteattge 73
                                                  cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                          Indels 108;
Length 14978;
                          290;
Score 378; DB 21;
Pred. No. 3.3e-70;
0; Mismatches 290;
29.0%;
66.2%;
         Local Similaricy
hes 780; Conservative
Query Match
Best Local 9
                         Matches
                                                                           14
                                                   21
                                                                                                    81
                                                   ð
                                                                         g
                                                                                                    ò
                                                                                                                         Ω
```

141 ggagctcattgaggagctggtcaacatcacccagaatc---aggcatcctctgcaacgg 197

à

```
1024
                                                                                                                                                                                  437
                                                                                                                                                                                                                                  496
                                                                                                                                                                                                                                                          489
                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                         549
                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                               723
                                                                                                                                                                                                                                                                                                                                                                                                                                                      724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             769
                                     257
                                                                                                                                                                                                                                                                                                                                                                                                       664
                                   cctgggggcctcggagcctcatccgaggcagggtcaggaggggggagaacagccgctcct
                                                                                    gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                               agcaaagtgcagcattacagtggagg.....cagatatgtgtgggaggggg-...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    785 cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            905 gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
             ggageteattgaggagetggteaacateacceagaaccagaaggeteegetetgeatgg
                                                                                                            gatcaacgtgtcaggctgcagtgccatcgagagacccagaggatgctgagcggattctg
                                                                                                                                                                                  agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                          374 ggtggcccagtttgtaaaaggacctgctcttacatttaaagaaacttttcgcgagggacg
                                                                                                                                                                                                                                  tttcaqatqaaqcatqaaaacttaqcatccttatctqtaqaccca-qacctqaccactta
                                                                                                                                                                                                                                                                                  agttccagattcattttttttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                    ---agecgaeeteageetteeeettgeecagggeteageetggtgggeeteetetgtee
                                                                                                                                                                                                                                                                                                                                                                                                                              ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                       agggccctgagctcggtggacccaggggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --tcttgctgtacctggggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----gagtocctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                  ctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                               ctgagcccagccaccctgccttggtgcatgggggcccagccgggtggccctcctcgtc-
-----gcttggagctgggggccagtgactcgggtttaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aa-----atattaaatatgttagcaaagagttaata 1175
cctggggcc----
                                                                                                                                                                                                                                                                                                                                                                                                                                                       665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1069
             134
                                                                                                          254
                                                                                                                                  318
                                                                                                                                                          314
                                                                                                                                                                                  378
                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                         434
                                                                                                                                                                                                                                                                                 497
                                                                                                                                                                                                                                                                                                         490
                                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                       550
                                                                                                                                                                                                                                                                                                                                                                              609
                                                                                                                                                                                                                                                                                                                                                                                                                               899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1145
                                                           194
                                                                                   258
                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          960
                                                        g
                                                                                                         qq
                                                                                                                                                       g
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                 οy
                                                                                   ò
                                                                                                                                 ò
                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                 οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Op
```

Search completed: May 13, 2001, 14:29:52 Job time: 18307 sec

Sequence 28, Appl Sequence 2, Appli

Sequence 12, Requence 17, Requence 17, Requence 26, Requence 26, Requence 30, Reque

Sequence Sequence Sequence

Sequence

Sequence 2, Sequence 2, Sequence 1, Sequence 10,

```
COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

COFFWARE: Patentin Release #1.0, Version #1.25
                   US-08-520-678A-28
US-08-467-607-2
US-08-469-362-2
US-08-950-13-569-1
US-08-545-1968-10
US-08-545-1968-12
US-08-966-631-1
US-08-496-631-1
US-08-520-678A-30
US-09-248-335-35
US-09-248-335-35
US-09-248-335-35
US-09-248-335-35
                                                                                                                                                                                                                                                                                                                                                                                 de Vries, Jan
Zurawski, Gerard
VENTION: Human Interleukin-13
                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOCTWARE: Patentin Release #1.0, Versocramment Application Data:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION A73:
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATE: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P. REISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
TELECHOME: 415-496-1200
TELECHOMUNICATION INFORMATION:
TELECHOME: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                    E: DNAX Research Institute
901 California Avenue
                                                                                                                                                                                                                                                                                              Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
Heath, Andrew
                                                                                                                                                                                                                                                     US-08-012-543-1; Sequence 1, Application US/08012543; Patent No. 5596072; GENERAL INFORMATION: APPLICANT: Culpepper, Janice
                                                                                                                                                                                                                                                                                                                                                   Aversa, Gregorio
Briere, Francine
Banchereau, Jacques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1290 base pairs
                    TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY:
ပ
                                                                                (without alignments)
1005.808 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    App]
                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                     Sequence 1, Al
Sequence 1, Al
Sequence 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 14,
Sequence 5, A
Sequence 5, A
Sequence 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 16,
Sequence 1, 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, 1
Sequence 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 8, 1
Sequence 4, 1
Sequence 29,
Sequence 4, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2,
Sequence 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1
Sequence 3
Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                      May 13, 2001, 14:20:52 ; Search time 226.02 Seconds
                                                                                                                                                                                                                                                                                                                /cgnl_7/ptodata/1/ina/5A_COMB.seg:*
/cgnl_7/ptodata/1/ina/5B_COMB.seg:*
/cgnl_7/ptodata/1/ina/6A_COMB.seg:*
/cgnl_7/ptodata/1/ina/6B_COMB.seg:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seg:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seg:*
          GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-594-469-1.
US-08-906-957-1
US-08-012-543-3
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-909-965C-8
US-08-157-101A-4
US-08-520-678A-29
US-07-864-475A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US95-06406A-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-252-966B-16
US-09-370-253-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US93-07645-3
US-08-371-121-24
US-08-371-121-2
US-08-371-121-2
                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-371-121-15
US-08-371-121-17
US-08-594-469-4
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -08-473-981A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-014-969-14
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-012-543-1
                                                                                                                                                                                       302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5258287-23
                                                  - nucleic search, using sw model
                                                                                                                                                                  Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                          Issued_Patents_NA:*
                                                                                                                                                                                                                                 seq length: 0 seq length: 2000000000
                                                                                                                US-09-451-527-91
                                                                                                                                                        IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       000040000000000000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378
378
376.4
209.4
207.6
207.6
207.6
207.6
207.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  203.4
201.8
176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67.8
67.2
67.2
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66.4
65.8
65.2
65.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68.2
                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68
                                                                                                                                                         Scoring table:
                                                  OM nucleic
                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                         Database
                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠
و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ç
```

1024

1084

g

g

ò

q

g

ò

a ò

ô

ò q g

ò

g

ò

g

ò

g

ò g ò QQ ô g ò g ò

ò

```
14 CCTCAATCCTCTCTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                          ---gacacaggggacaggagaaagggtcagagatgctgctt
                                                                                                                                 gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cetegetectgeattggetetgggetecatggegetetggttgaetgtggteattge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccttctgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagoatagtatagaagogtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                   CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGAGGGGGCAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 378; DB 5; I
Pred. No. 4.3e-86;
0; Mismatches 290;
                                                                                                                                                                                       aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                      APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRICR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRICR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRICR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
                                                                                                                                                                                                                                                                                        Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.0%;
66.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: double
                                                                        cctggggcc-----
                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TOPOLOGY: linear
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 780; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                            RESULT 2
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                            965 (
                                                                                                                                                          1085
                                                                                                                                                                                      1069
                                                                                                                              1009
                                                                                                 1025
                                                                       096
                                                                                                                                                                                                                    1145
                606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194
                ò
                                      qq
                                                                     ò
                                                                                              QQ
                                                                                                                            δ
                                                                                                                                                       qq
                                                                                                                                                                                    ογ
                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                  12;
                                                                                                                                                                                                   317
                                                                                                                                                                                                                                                                                                                                                                                                                                  377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 496
                                                                                                                                                                                                                                                            257
                                                                                                                                                                                                                                                                                                                                               253
                                                                                                                                                                                                                                                                                                                                                                                                                                                 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     905, GTGGCTGCTGGCACTTGGAGCCTAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT 964
                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                      14 CCTCAATCCTCTCTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 73
                                                                                                                                                                                                                                                                                                                                                                                          cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                 ctctcaaaagcccgcggcaggtttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cageatggtgtggagegteaacetgacegecggeatgtactgegeagetetagaatetet
                                                                                                                                                                                                                                                                                                                                                                           gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tttcagatgaagcatgaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agttccagattcatttttttttcttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tttattattgtgtgttatttaaacaagtgtctttgttgtgctgggggcagggagtg---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTATTATTGTGTGTTATTAAATGAGTGTGTTTGTCACCGTTGGGGATTGGGGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----gcttggagctgggggcccagtgactcgggtttaga-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490 AGTIGCAGATICATITITCTIGATGTCAAAAATGTCTIGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----tettgetgtacetgggagtggcacagacatgtttettettageetta
                                                                                                                290; Indels 108;
                                                                                      Length 1290;
                                                                                   Score 378; DB 1;
Pred. No. 4.3e-86;
0; Mismatches 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.0%;
66.2%;
                                                                                                                Conservative
              CDS
45..443
                                                                                   Query Match
Best Local Similarity
Matches 780; Conserv
             ; NAME/KEY:
; LOCATION:
US-08-012-543-1
FEATURE
                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                                                                                                                                                                                           258
                                                                                                                                                                                                                                                                                                                                                                                                                                318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      817
                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 725
```

12;

Gaps 80 73

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  965 GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1085 GTCTGCCAGCCAGCCAGCTCTCAGCCAACGAGTAATTTATTGTTTTTCTCGTATTTT 1144
                                                                              437
                                                                                                                                  496
                                                                                                                                                            489
                                                                                                                                                                                                                                           608
                                                                                                                                                                                                                                                                     809
                                                                                                                                                                                                                                                                                                                                                  723
                                                                                                                                                                                                                                                                                                                                                                          724
                                                                                                                                                                                                                                                                                                                                                                                                                               784
GATCAACGTGTCAGGCTGCAGTGCCATCGAGAAGACCCCAGAGGATGCTGAGCGGATTCTG
                          ctctcaaaagcccgcgggaaggtaaattccagtgaacgcagccgagacaccaaaattga
                                          agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                    434 GITCAACIGAAACTICGAA----AGCAICAITATITGCAGAGACAGGACCIGACIAIGA
                                                                                                                                                                                     agttccagattcattttttttttctcgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                        550 TTAGGGAGGGTAAATTCCTTAGCTTAGACCTCAGCCTGTGCTGCCGCTTTCAGCCT-
                                                                                                                                                                                                                                                                                             ctgagcccagccacccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                     ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGGCTCAGCCTGGTGGGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                         AGGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                                                                                                                                                                                                                                                                                                    agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg---
                                                                                                                                                                                                                                                                                                                                                                                                                 tttattattgtgtgttatttaaacaagtgtctttgttgtgctgggggacagggagtg---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       905 GTGGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----gagtocottgggaataagcactgtgtgtaaaattotgctacotcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gictgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
                                                                                                     374 GGTGGCCCAGTTTGTAAAGGACCTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACG
                                                                                                                                                                                                               AGTTGCAGATTCATTTTTCTTTTCTGATGTCAAAAATGTCTTGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                                                                                                                ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1025 CCTGGGGCCTCGGAGCCTCCAGGCAGGCTCAGGAGAGGGGCAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----gcttggagctgggggcccagtgactcgggtttaga---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΑĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
                                                                            378
                                                                                                                                                                                    497
                                                                                                                                                                                                              490
                                                                                                                                                                                                                                        552
                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                899
                                                                                                                                                                                                                                                                                                                                                                          999
                                                                                                                                                                                                                                                                                                                                                                                                    724
                                                                                                                                                                                                                                                                                                                                                                                                                             725
                                                                                                                                                                                                                                                                                                                                                                                                                                                       170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   606
                                                                                                                                                   Dp
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                        à
                                         g
                                                                        οy
                                                                                                 Q
                                                                                                                               δ
                                                                                                                                                                                    ò
                                                                                                                                                                                                       Ob
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              314 CCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   723
                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctgagcccagccacccctgccttggtgcatgggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggageteattgaggagetggteaacateacceagaate---aggeatecetetgeaaegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 258 gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318 ctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGGCTCAGCCTGGTGGGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----tgcacttcatcaacgctgagggaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                          Score 378; DB 5; Length 1290;
Pred. No. 4.3e-86;
0; Mismatches 290; Indels 108;
                                                             PRIOR APPLICATION DATA:

PRIOR APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-ADG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
                                  APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                           29.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 780; Conservative
                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                       PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
```

12;

```
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                           LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                           1008
                                                                                                                                                                                                                                                                                                                                                                                                                        965 GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGT 1024
                                                                                                                                                                                                                                                                                                                                                           1009 gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt 1068
                                                                                                                                                 724 agcaaagtgcagcattacagtggagg-----769
                                                                                                                                                                                                                                                964
665 AGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG 724
                                                                                                                      785 CACTICACACACAGGCAACTGAGGCAGACAGCAGCTCAGGCACACTTCTTGGTCTTA 844
                                                         725 AGCACACTGTAGCATTACAGTGGGTGCCCCCTTGCCAGACATGTGGTGGGGACC
                                                                                           --tettgetgtacetgggagtggeacagacatgttettettettageetta
                                                                                                                                                                                                                                 905 GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAAGCAGT
                                                                                                                                                                                                                                                                                                                                           960 cctgggggcc-----gacacaggggacaggagaaagggtcagaagatgctgctctt
                                                                                                                                                                                                                909 -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1069 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LABIT-LE BOUTEILLER, Christine MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEE: FOLEY & LARDNER: 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: MINTY, Ad
APPLICANT: KAGHAD, MA
APPLICANT: LABIT-LE
APPLICANT: MAGAZIN,
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
STREET: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                      g
                                                                                         ò
                                                                                                                    셤
                                                                                                                                                                                 Op
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                           à
                              à
                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 562 TTAGGGAGGGGTAAAATTCCTTAGCTTAGACCTCAGCCTGGCCGCTCTTCAGCCT- 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81 teteacetgeeteggtggeettgeetecegageeetgtgaeteeeteceeaaceeteaa 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 ggagetcattgaggagetggtcaacatcacccagaate---aggeatecetetgcaacgg 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26 cercaarcererecergrescacressecercarsseserrrrsrrsarcacsserrarse 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258 gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           378 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagcatggtgtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    326 CCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             502 AGTIGCAGATICATITITCTITCTGAIGTCAAAAATGTCTTGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agttccagattcatttttctttccgacgtcacaaatttcttagggaggtgggggg...-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 376.4; DB ]
Pred. No. 1.1e-85;
                                                                                                                                                          16781/383
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhaud
                                                                                                               NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                               TELEX: 904136,
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
                                                                                                                                                                                            TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28.9%;
66.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 779; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
117..452
                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                    nucleic acid
                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                     15..452
                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY;
; LOCATION:
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
```

12;

S

```
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: MGAZIN, Marilyn Little of INVENTION: Procein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                  cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                      1037 CCTGGGGCCTCGGAGCCTCATCCGAGGCTCAGGAGAGGGGCAGAACAGCCGCTCCT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1097 GTCTGCCAGCCAGCCAGCTCTCAGCCAACGAGTAATTATTGTTTTTCCTCGTATTT 1156
                                                                                                                          169
                                                                                                                                                                                                                                      796
                                                                                                                                                                               ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                             677 AGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                         agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                       917 GTGGCTGCTGCCACTTGGAGCCCAAGGGTTCAGAGACTCAGGGCCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
             ctgagcccagccacccttgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                ------gottggagctgggggcccagtgactcgggtttaga-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentIn Release #1.0, Version #1.25
CUBRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1069 aaagttaagaaataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: LEPLATOLL,
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, MOURA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009
                                       621
                                                                   999
                                                                                                                         724
                                                                                                                                                                                                                                                                                                                                                                                                            096
                                                                                                                                                                                                                                                                                                                        QQ
                                Q
                                                                                        QQ
                                                                                                                                             Q
                                                                                                                                                                               à
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                ò
                                                                                                                       ò
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
Method for the extraction of periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136 ACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCC 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                343 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106 teceegageeetgtgaeteceteceaaceeteaaggageteattgaggagetggteaae 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 223 accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16 TCCCCAGGCCCTGTGCCTCCTCTACGGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256 TTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 209.4; DB 1;
Pred. No. 6.8e-44;
0; Mismatches 81;
                                                                                     APPLICATION NUMBER: PCT/FR92/00280 FILING DATE: 27 AMR-1992 PRIOR APPLICATION DATA: APPLICATION NUMBER: FR 91 00137
                                                                                                                                                                                                                                                                                                                      16781/383
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/08594469
Patent No. 5700665
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                       NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                      FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , MOLECULE TYPE: DNA (genomic)
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16.1%;
                                                                                                                                                                                                                                                                                                                                                          (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                   08-JAN-1992
                                                                                                                                                                                                                                 FILING DATE: 29-MAR-1991 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 384 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 904136
INFORMATION FOR SEQ'ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 76.3
Matches 271; Conservative
                                              FILING DATE: 30-NOV-: PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: M
TITLE OF INVENTION: P
TITLE OF INVENTION: P
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
```

```
periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             163 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103 gecteccegagecetgtgaetecetececaaceeteaaggageteattgaggagetggte 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55 GCCTTCGCTGGCCTCTCCCAGTACTGCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   220 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gocatocaaaggacccagaggatgotgaaagcactgtgctotcaaaagcccgcgggcaggg 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                  OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 207.6, DB 2;
Pred. No. 2e-43;
0; Mismatches 84;
                                                                                                          STREET: 625 Slaters Lane - Fourth Floor CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: REF/LEGOUX TELECOMMUNICATION: TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                us/08/906,957
                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-594-469-1; Sequence 1, Application US/08594469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: DNA (genomic) US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.98; 75.78;
                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                                                                                                                                                                                                06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FICHTER, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 271; Conservative
                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
            TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                   STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  103 gcctccccgaqccctgtgactccccccaaccctcaaggagctcattgaggagctggtc 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aacatcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaac 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gccatccaaaaggacccagaagatgctgaaagcactgtgctctcaaaagcccgcgggcaggg 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55 GCCTTCGCTGGCCCTGTGCTCCCAGTACTGCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115 AACATCACCAGAACCAGAAGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAAC 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGG 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 295 CAGTITICCAGCTIGCATGTCCGAGACACCAAAATCGAGGTGGCCCCAGTITGTAAAGGAC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400 ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCAACTGAAACTTCGAAA 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 15.9%; Score 207.6; DB 1; Best Local Similarity 75.7%; Pred. No. 2e-43; Matches 271; Conservative 0; Mismatches 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOWE, Marc
TIFLE OF INVENTION: Method for the extraction
                            - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                     NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 95 01083
FILING DATE: 31.4N-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                          PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
US-08-906-957-4
; Sequence 4, Application US/08906957
; Patent No. 5856142
                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
      E: Bacon & Thomas
625 Slaters Lane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEO ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                      ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
                                                 Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                   Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                  FILING DATE:
          ADDRESSEE:
                                                                   STATE: V
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

Gaps

3;

```
TITLE OF INVENTION: Method for the extraction of TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the TITLE OF INVENTION: presence of arginine NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103 gootcoccgagcoctgtgactcoctccccaaccctcaaggagctcattgaggagctggtc 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163 aacatcacccagaatc---aggcatcccttgcaacggcagcatggtggggggtcaac 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452 AACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  280 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15.9%; Score 207.6; DB 2; Length 4410;
llarity 75.7%; Pred. No. 6.1e-43;
Conservative 0; Mismatches 84; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                              STREET: 625 Slaters Lane - Fourth Floor CITY: Alexandria STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UMBER: US/08/906,957
06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                           PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/594,469
                        Sequence 1, Application US/08906957; Patent No. 5856142
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPALIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: FICHTER, Richard E REGISTRATION NUMBER: 26,3
                                                                                                        APPLICANT: MALDONADO, Paul APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFRAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 06 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           271;
          US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                 periplasmic proteins of prokaryotic microorganisms in the presence of arginine 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccatccaaaggacccagaaggatgctgaaagcactgtgctctcaaaagcccgcgggaggg 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             163 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctgaccgccgcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGAC 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCAACTGAAACTTCGAAA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 4410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                   ō
                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                 Method for the extraction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 207.6; DB 1
Pred. No. 6.1e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                               ADDRESSEE: Bacon & Thomas
STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 95 01083
FILING DATE: 31-JAN-1995
ATTORREX/AGENT INFORMATION:
NAME: FICHTER, Richard E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4410 base pairs
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method fr
TITLE OF INVENTION: periplasi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.9%;
75.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 15.9
Best Local Similarity 75.7
Matches 271; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                             ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                        NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                          Virginia
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                      STATE: V
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

7;

```
138
                                                                           198
                                                                                                                             258
                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                    438
                                                                                                                                                                                                                                                                                                                                                               464
                                                                                                                                                                                                                                                                                                                                                                                        558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1135
                                                                                                                                                                                                                                                                                                                                       498
                                              Op
                                                                          õ
                                                                                                   pp
                                                                                                                              ò
                                                                                                                                                   a
                                                                                                                                                                               ò
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                         ò
                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                   οχ
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ceteggtggcettgcctccccg-----agecetgtgactccctcccaaccet 137
632 CAGTTTTCCAGCTTGCATGTCCGAGACACCACAAAATCGAGGTGGCCCAGTTTGTAAAGGAC 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 400 ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 457
                                                 692 CTGCTCTTACATTTAAGAAACTTTTTCGCGAGGGACGGTTCAACTGAAACTTCGAAA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30 tcctgcattggctctgggctccatggcgctctggttgactgtggtcattgctctcacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 1212; 4.7e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/012,543
                                                                                                                                                                                                                  Aversa, Gregorio
Briere, Francine
Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
NVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15.9%; Score 207; 56.8%; Pred. No. 4.
                                                                                                                                                                                                                                                                                                                        DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                          de Waal Malefyt, Rene
                                                                                                              Sequence 3, Application US/08012543 Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                    901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ching, Edwin P. REGISTRATION NUMBER: 34,090 REFERENCE/DOCKET NUMBER: DX(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196
                                                                                                                                                      Culpepper, Janice
McKenzie, Andrew
Dang, Warren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1993
N: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1212 base pairs
                                                                                                                                                                                                        Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                               California
                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70..465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                     94304-1104
                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 715; Conserv
                                                                                                                                       GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION:
                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                       RESULT 10
US-08-012-543-3
                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90
g
                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    618 gecaccetgeettggtgcatggggeceageegggtggeeeteeteegtetgcaetteat 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             738 ttac---agtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtggcac 793
                                                                                                                                                                                 cagoatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     594 GCACTGCCTAGTGCTCAGGGTCTCAGCCTGGCAACACCCCCACCCCACCCC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  751 GAGCACATTCTTCTTCTTGATCTTATTATGT-TGTGTGTTATTAATGAGTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          854 tgtgctggggacagggagtggctgggggcccagtgactcgggtttaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      810 AGTATCCCGGTGGGGACATGGTTTGCTGCCTATGCCCTGGGGGGCTCCAGCATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctgggg-----ccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .015 cactcagcagctggcctcagccaagcagtaatttattgtttttccttgtatttaaagtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          990 ACGCAACCAACCACCATCAGCAATAACTTATTGTT-----TTGTTCTTATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aagaaataaaatagttatcaaagagttaataatatagaagagtagcctaaaaggctg
CCTTGGTGGTCTCGCCGCCCCAGGGCCGGTGCCAAGATCTGTGTCTCTCCCTCTGACCCT
                                                                 caaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctgcaacgg
                                                                                             gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                288 GACCAACATCTCCAATTGCAATGCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                           318 ctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348 TAACCGCAAGGCCCCCAC-----TACGGTCTCCAGCCTCCCGGATACCAAATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agitgatccagitggagaaaacctgcicacctatgiaagggggagittatcgccaiggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tttcagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548 GGAGGGTTGAGGAGGGAGATGCCTCAGCTTTGGCCTCAGCCT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        691 AGACCGTGAGTCCAGCCTGTGGCCTGGTCCACACAGGCCAACTGAGGCAGGAGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       794 agacatgiticitcitagecitatitatiatigigigitatitaaaacaagigicitigit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      870 resecretesesrecersecararracreraracaraacrersecrecererasec
                                                                                                                                                                                                                                          228 CAGCATGGTATGGAGTGTGGACCTGGCCGCTGGCGGGTTCTGTGTAGCCCTGGATTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGTGGACTCATTTTCCTTTCTCACATCAGACTTTGCT-----GGGGAGAGGCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          678 caacgetgagggaaagcaetgeateceatgaetgteeetteeteagagcaaagtgeagea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                930 TCCAGGTCTCACCCCAGGCAGGAGATGGGAGGGGAGGCCAGAGCAACACTCCTGTCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
------CCATCCCTGGGCATCTCA 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCE::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: MICTOSOFT Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
 CTTCTAATGAGGAGAGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 19930818
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1157
                         498
459
                                                                          558
                                                                                                                            618
                                                                                                                                                                             678
                                                                                                                                                                                                     649
                                                                                                                                                                                                                            738
                                                                                                                                                                                                                                                                              794
                                                                                                                                                                                                                                                                                                                             854
                                                                                                                                                                                                                                                                                                                                                                               606
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                 g
                                                                         ò
                                                                                                  q
                                                                                                                            ò
                                                                                                                                                  g
                                                                                                                                                                           δ
                                                                                                                                                                                                    a
                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
셤
                        δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            348 TAACCGCAAGGCCCCAC-----TACGGTCTCCAGCCTCCCCGATACCAAAATCGA 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaacgg 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cctcggtggccttgcctccccg-----agccctgtgactccctccccaaccct 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agigatccagitggigaaaaaccigcicacciatgiaaggggagittaicgccaiggaaa 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tttcagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaa 497
              ctctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaa 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAGGAGCTTATTGAGGAGCTGAGCAACATCACACAAGACCAGACTCCCCTGTGCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 207; DB 5; Lv
Pred. No. 4.7e-43;
0; Mismatches 415;
                                                                                                                                  TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh
                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                 FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
                                                                                                Sequence 3, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     US 07/933416
                                                                                                                                                                                                              SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                              FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 56.8%;
Matches 715; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              double
                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
; TOPOLOGY: line
PCT-US93-07645A-3
                                                                         RESULT 11
PCT-US93-07645A-3
           1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                438
           ó
                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q.
```

```
1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 990 ACGGCAGCAACCAGCCCTCAGCCATGAATAACTTATTGTT----TTGTTCTTATATTT 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617
                                                                                                                                                                    677
                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                        737
                                                                                                                                                                                                                                                                                                  069
                                                                                                                                                                                                                                                                                                                                            793
                                                                                                                                                                                                                                                                                                                                                                                    750
                                                                                                                                                                                                                                                                                                                                                                                                                              853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1195 ctctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaa 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                || || || CTTTT---CATTGACTGTCAAACTAGAAACGGGAAATAAAGATGGTGACAGATAAAAAA 1212
                                                                                  ttac---agtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtggcac
                                                                                                                                                                                                                                                                                                                                                                                    agacatgtttcttcttagccttattattattgtgtgttatttaaacaagtgtctttgtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgtgctgggggacagggagtggcttggagctgggggcccagtgactcgggtttaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        810 AGTATCCCGGTGGGGACATGGTTTGCTGCCTATGCCCTGGGGGCTCCAGCATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961 ctgggg-----ccgacacaggggacaggagaaagggtcagagatgctgcttgtctgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               930 TCCAGGTCTCACCCCAGGCAGGAGAGAGGGAGGCCAGAGAGCAACACTCCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1075 aagaaataaaaatatgttatcaaaagagttaataatatatagaagagtagcctaaaaggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gccaccctgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttcat
                                                                                                                                                                                                                                                        caacgctgagggaaagcactgcatccatgactgtcccctcctcagagcaaagtgcagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      751 GAGCACATTICTTCTTGATCTTATTTATGGT-TGTGTTATTTAAATGAGTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               870 TGGGCTCTGGGGTCCCTGGCAATATTACTGTATACATAACTCTGCTACCTCACTGTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1015 cactcagcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagtt
548 GGAGGGTTGAGGAAGGGAGATGCCTCAGCTTTGGCCTCAGCCT------
```

```
Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                1105 AAGGTGATGTGTAGTGAATG-----GGGGGAGGGTGGTGGGTTTGTCACTGAACAAA 1156
                                                                                                                                                                 961 ctgggg-----ccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgc 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                  1195 ctctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaa 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----gagtccttgggaataagcactgtgtgtaaaattctgctacctcactggatc
                                                                                                                                                                                                                                1015 cactcagcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagtt
 GAGCACATTTCTTCTTGATCTTATTATTATGGT-TGTGTGTTATTTAAATGAGTCTGTC
                                                               810 AGTATCCCGGTGGGACATGGTTTGCTGCCTATGCCCTGGGGGCTCCAGCATTGAAGCAG
                                                                                                                                870 TGGGCTCTGGGGTCCCTGGCAATATTACTGTATACATAACTCTGCTACCTCACTGTAGCC
                                                                                                                                                                                                 930 TCCAGGTCTCACCCCAGGCAGAGATGGGAGGGGAGGCCAGAGACAAAAACTCCTGTCTGCC
                                                                                                                                                                                                                                                                   990 ACGGCAGCAACCAGCCCTCAGCCATGAAATAACTTATTGTT-----TTGTTCTTATATTT
                                                                                                                                                                                                                                                                                                                                                                    tgtgctggggacagggagtggcttggagctgggggcccagtgactcgggtttaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEE: FOLEY & LARDNER: 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JMBER: US 07/938,161
30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/371,12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 24, Application US/08371121 Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: CAPUT, Daniel APPLICANT: FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA: APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
SOFTWARE: PatentI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
 751
                                                                                                   606
                                ò
                                                             Db
                                                                                                ò
                                                                                                                    , q
                                                                                                                                                                                              g
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                  13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     348 TAACCGCAAGGCCCCCAC----TACGGTCTCCAGCCTCCCGGTACCAAAATCGA 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90 cctcggtggccttgcctcccg-----agccctgtgactccctcccaaccct 137
                                                                                                                                                                                                                                                                                                                                                                                                                   167
                                                                                                                                                                                                                                                                                                                                                                                                                                                  138 caaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaacgg 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  399 AGTAGCCCACTTTATAACAAAACTGCTCAGCTACACAAAGCAACTGTTTCGCCACGGCCC 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ttac----agiggaggcagatatgigtgggagggggtcttgctgtaccigggagtggcac 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    691 AGACCGTGAGTCCAGCCTGTGGCCTGGTCCACACAGGGCAACTGAGGCAGCAGCAGCTT 750
                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                   30 tectgeattggetetgggetecatggegetetggttgaetgtggteattgeteteaeetg 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caacgetgagggaaagcactgcateceatgactgteeetceteagagcaaagtgcagea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  168 TAAGGAGCTTATTGAGGAGCTGAGCAACATCACAAGAGCCAGACTCCCCTGTGCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                228 CAGCATGGTATGGAGTGTGGACCTGGCGGCTGGGGTTCTGTGTAGCCCTGGATTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  438 tttcagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gccacccctgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318 ctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 207; DB 5; Length 1212;
Pred. No. 4.7e-43;
0; Mismatches 415; Indels 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGGGTTGAGGAGGAAGGGAGATGCCTCAGCTTTGGCCTCAGCCT------
          APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATE: 29-JAN-1993
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
                                                                                                                                                                                                                                                 15.9%;
56.8%;
                                                                                                                                                                                                                                                                 Best_Local Similarity 56.8
Matches 715; Conservative
                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: double
PRIOR APPLICATION DATA:
                                                                                                                                                                              ; TOPOLOGY: linear
PCT-US93-07645-3
                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      649
                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
```

```
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                173 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          290 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggggcagatttcca 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         350 gigaacgcagccgagacaccaaaaitgaagigaiccagiiggigaaaaaccigcicacci 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182 AGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCGTCACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                        Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                  15.6%; Score 203.4; DB 1;
1larity 77.8%; Pred. No. 2.1e-42;
Conservative 0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       410 atgtaaggggagtttatcgccatggaaatttca 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302 ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3000 K Street, N W., Suite 500
                                                                                                 16781/383
FR 91 03904
                FILING DATE: 29-MAR-1991
ATTORNEY/AGENY INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFREENCE/DOCKET NUMBER: 1678:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                         LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                           TELEFAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington, D.C.
                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
es 259; Conserv
                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Was
                                                                                                                                                                                                                                                                                                                                          US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATGGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGCGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      230 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                            OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 201.8; DB 1;
Pred. No. 5.3e-42;
0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 410 atgtaaggggagtttatcgccatggaaatttca 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302 ATTTAAAGGAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16781/383
                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERNHARD D.
RECISTRATION NUMBER: 28,665
                                                                                                                    APPLICATION NUMBER: US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 26, Application US/08371121
; Patent No. 5652123
; GENERAL INFORMATION:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: DNA (genomic)
US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.5%;
illarity 77.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX: 904136,
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query. Match
Best Local Similarity
Matches 258; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
US-08-371-121-26
```

;

207 CAGCATGGTATGGAGTGTGGACCTGGCCGCTGGCGGGTTCTGTGTAGCCCTGGATTCCCT 266

```
5
                                                                             APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTBILLER, Christine
APPLICANT: LABIT-LE BOUTBILLER, Christine
APPLICANT: MAGAZIN, MAILIN,
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctcggtggcttgctccccg-----agccctgtgactcctccccaacct 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caaggagetcattgaggagetggtcaacatcacccagaatcaggcatcctetgcaacgg 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 198 cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27 TCTCTCACTGGCTCTGGGCTTCATGGCGCTCTGGGTGACTGCAGCCTCTGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30 tectgeattggetetgggeteeatggegetetggttgaetgtggteattgeteteaeetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           core 176; DB 1; Length 447; ced. No. 1.9e-35; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                      : FOLEY & LARDNER
3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.5%; Score 176;
67.2%; Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION 1439
PRIOR APPLICATION NUMBER: US 07/938,161
PRICH DATE: 30 NOV-1992
PRICH APPLICATION NUMBER: US 07/938,161
PRIOR APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27 MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTONNEY,AGENT INFORMATION:
NAME: SAME, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 26:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/371,121
               GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
MINTY, Adrian
FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                   Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 13.5
Best Local Similarity 67.2
Matches 289; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE
                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-371-121-26
                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                          STREET:
                                                             APPLICANT
                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Oy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
```

em\_esthum24:\* em\_esthum25:\* em\_esthum26:\*

em\_esthum27:\* em\_esthum28:

em\_estin1; em\_estin2;

em\_estin3:\* em\_estin4:\* em\_estom1:\* em\_estom2:\*

em\_estin5:

em\_esthum13:\* em\_esthum14:\*

em\_esthum16:\*

em\_esthum15

em\_esthum17: em\_esthum18:

em\_esthum20:\* em\_esthum21:\* em\_esthum22:\* em\_esthum23:\*

em\_esthum19:

em\_esthum10:\* em\_esthum12:\*

```
May 13, 2001, 11:39:51 ; Search time 5997.24 Seconds (without alignments) 1896.606 Million cell updates/sec
                                                                                                                                                                  19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                        9623517 seqs, 4368049070 residues
                                                  OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                               IDENTITY_NUC Gaport 1.0
                                                                                                                                    US-09-451-527-91
1302
                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_esthum2:*
em_esthum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_esthum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_esthum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_esthum5:
                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:*
gb_est4:*
gb_est5:*
gb_est5:*
gb_est6:*
gb_est8:*
gb_est8:*
gb_est10:*
gb_est10:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_est16:*

gb_cst17:*;

gb_cst19:**

gb_est19:**

gb_est21:**

gb_est21:**

gb_est23:**

gb_est33:**

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est12:*
gb_est13:*
gb_est14:*
gb_est15:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_esthum8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_esthum6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_esthum7
                                                                                                                                                                                                                                                                                                                                                                                                               gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                EST:*
                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                Database :
                                                                                                                                                                    sedneuce:
                                                                                                                                                                                                                                        Searched:
                                                                                  Run on:
```

em\_estpl3:\* em\_estpl4:\*

em\_estpl5:\* em\_estpl6:\* em\_estpl7:\* em\_estp18:\*

em\_estpl1:\* em\_estp12:\*

em\_estov1: em\_estov2:

em\_estpl10:

em\_estp19:

em\_estro19:\* em\_estro20:\*

gb\_est25

9b\_est26::\*
9b\_est27::\*
9b\_est27::\*
9b\_est230::\*
9b\_est310:\*
9b\_est311:\*
9b\_est411:\*
9b\_est411:\*
9b\_est441:\*
9b\_est441:\*
9b\_est441:\*
9b\_est441:\*

em\_estro18:\*

em\_estro10:\*

em\_estroll em\_estro12: em\_estro13:

em\_estro8:\*

em\_estro7

em\_estro9:\*

em\_estro6:\*

em\_estro5

em\_estro3: em\_estro4:

em\_estro2

em\_estro14:\*

em\_estro15: em\_estro17: em\_gss\_vrt1:\* em\_gss\_vrt2:\* em\_gss\_vrt3:\*

90 - 9881... 90 - 9882... 90 - 9885... 90 - 9885... 90 - 9886... 90 - 9888... 90 - 9888... 90 - 98810...

em\_gss\_rodl:\* em\_gss\_rod2:\* em\_gss\_rod3:\* em\_gss\_rod4:\* em\_gss\_rod5:\*

em\_gss\_pln1: em\_gss\_pln2: em\_gss\_pro:\*

```
em_gss_fun:*
em_gss_hum1:*
em_gss_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_gss_hum3:*
em_gss_hum4:*
em_gss_hum5:*
em_gss_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_gss_inv1:*
em_gss_inv2:*
em_gss_inv3:*
em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_gss_hum7
9b_est50

9b_est51::

9b_est53::

9b_est53::

9b_est56::

9b_est56::

9b_est66::

9b_est66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_est100::%
gb_est101::%
gb_est102::%
gb_est105::%
gb_est105::%
gb_est66::%
gb_est66::%
gb_est67::%
gb_est71::%
gb_est71::%
gb_est71::%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est91:*
gb_est93:*
gb_est94:*
gb_est94:*
gb_est96:*
gb_est97:*
gb_est97:*
```

90-98812 ... ... 90-98813 ... ... 90-98813 ... ... 90-98815 ... ... 90-98817 ... 90-98819 ... 90-98821 ... 90 9b\_9ss30:\*
9b\_9ss31:\*
9b\_9ss32:\*
9b\_9ss32:\* 9b\_gss23: 9b\_gss24: 9b\_gss25: 9b\_gss26: 11990 11991

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

٠		
	ż	
K	1	
2		
5		
F	2	
ï	1	

Description	AI208823 qq38e05.x	AA905851 0j87e03.s	AA646049 vs34d01.r	AL513947 AL513947	AL513837 AL513837	AW1.297.22 xe23b07.x	AI921379 wo24b03.x	AL077063 Drosophil	AI224992 qw95a10.x	AI950892 wx56f05.x	AW089036 xc79a04.x	AL514843 AL514843	AI609594 tw28d06.x	AL514437 AL514437	AW074172 xb08q08.x	AZ682070 ENTGO02TR	AI871697 wm51c05.x	BG178352 602330117
ΔI	A1208823	AA905851	AA646049	AL513947	AL513837	AW129722	AI921379	CNS00JUP	AI224992	AI950892	AW089036	AL514843	AI609594	AL514437	AW074172	AZ682070	AI871697	BG178352
•	17	13	10	105	105	111	103		17						110	225	103	174
Query Match Length DB	534	517	430	431	300	969	407	967	248	319	351	1290	339	206	733	968	297	903
Query	7.8	7.4	7.4	6.2	6.2	6.1	6.1	. 0 . 9	0.9	6.0	0.9	0.9	0.9	0.9	5.9	5.9	5.9	5.9
Score	101	96.4	96.2	81.2	81	80	79.8	78.6	78.4	78.2	78.2	78.2	77.8	77.6	77.2	77.2	77	77
Result No.	c 1	c 0	e	O 4	n S	o o	c 2	80	თ ე	c 10	c 11	c 12	c 13	c 14	c 15	c 16	c 17	c 18

was prepared from mRNA obtained from Clontech Laboratories , Inc., and primed with a Not I - oligo(dT) primer [5' TGTTACCAATCTGAAGTGGGAGGGGCGCCCCAATTTTTTTT	881 gctgggggcccagtgactcgggtttagagagtccctgg	979 acaga
AW084869 xc64d11.x AL513871 AL513871 AW169790 x32x110.x AW169790 x32x110.x AL515173 AL515173 AL92277 wollfil.x AL633330 ts66h03.x AL654672 tz28009.x AL654672 tz28009.x AL654672 tx28009.x AL654672 tx28009.x AL954577 brosophil AU957797 Drosophil AU952577 WW89DD2.x AL045220 DKPEP4340 AW188539 xk01b10.x AL514063 AL514063 AL514063 AL514063 AL515233 AL515333	AL513789 AL513789 AL431327 ar55603.x AW080357 xe52e10.x BE421175 HWM006.E1	Soares_Lestis_NHT Homo sapiens CDNA clone IMAGE:1837472 to gb:L06801 INTERLEUKIN-13 PRECURSOR (HUMAN); mRNA GI:3770765  GI:3770765  GI:3770765  Smetazoa; Chordata; Craniata; Vertebrata; Euteleostomi; utheria; Primates; Catarrhini; Hominidae; Homo. to 534)  Tool Tool Tool Tool Tool Tool Tool Too
6.8 5.9 389 110 AW084869 66.8 5.9 1101 105 AL513871 66.4 5.9 423 113 AW1627215 75.6 5.8 261 111 AW163790 75.4 5.8 272 103 A1522707 75.4 5.8 272 103 A152707 75.4 5.8 324 23 A163830 75.4 5.8 324 23 A163830 75.4 5.8 324 23 A163842 75.4 5.8 104 AN167228 75.5 5.8 105 229 CNSO0599 75.2 5.8 105 105 AL514063 75.5 5.8 498 22 A1554146 75.5 5.8 498 22 A1554146	5.8 383 105 5.8 400 20 5.8 476 110 5.8 829 166	A1208823 534 bp mRNA EST 29-NOV-1  9 493805.x1 Soares_Lestis_NHT Homo sapiens cDNA clone INAGE 3 / similar to gb:L06801 INTERLEUKIN-13 PRECURSOR (HUMAN); sequence. A1208823 A1208823. GI:3770765 EST. human. Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutelee Manmalia; Eutheria; Primates; Catarrhin; Hominidae, Homo. 1 (bases 1 to 534) NCI-CGAP http://www.ncbi.nlm.nh.gov/ncicgap. Tel: (301) 496-1550 Email: Robert_Strausbergenh.gov CDNA Library Preparation: M. Bento Soares, Ph.D., M. Fatim. Ph.D. CONTACT: Robert_Strausbergenh.gov CDNA Library Preparation: M. Bento Soares, Ph.D., M. Fatim. Ph.D. CON Sequencing by: Washington University Genome Sequencin Clone distribution: NCI-CGAP clone distribution informatii found through the I.M.A.G.E. Consortium/LLNL at: neutrony the I.M.A.G.E. Consortium/LLNL at: neutrony capiens adjacon Location/Qualifiers  1 . 534 / Crone inb="Roberts Steetis_NHT" / Ab_Nost="Made: 1833472" / Clone="Made: Boares_Lestis_NHT" / Alb_Nost="Made: Boares_Lestis_NHT" / Alb_Nost="Made: Boares_Lestis_NHT" / Alb_Nost="Made: Boares_Lestis_NHT" / Alb_Nost: Brector: pyTh3D-Pac (Pharmacia) with a modil / Alb_Nost: Site_I.NOT: Site_I.NOT: Ist st.
10000000000000000000000000000000000000		RESULT 1 A1208823/C LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM TITLE JOURNAL COMMENT COMMENT SOURCE SOURCE SOURCE SOURCE SOURCE SOURCE SOURCE

```
/organism="Mus musculus"
/db_xref="taxon:10090"
/db_xref="taxon:10090"
/clone="InAGE:1140097"
/clone=lib="Stratagene mouse Tcell 937311"
/tissue_type="rcel]
/dev_stage="M30 CD4+ cells"
/dev_stage="M30 CD4+ cells"
/dev_stage="M30 CD4+ cells"
/dev_stage="Organ: blood' vector: pBluescript SK-; Site_1:
/note="Organ: bloo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                967 ----ccgacacaggggacaggagaaaagggtcagagatgctgctgtcttgtctgccactcagc 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1023 agctggccctcagccaagcagtaatitattgtttttccttgtatttaaagttaagaaata 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1143 gtgtgtggccaggccggggcgggtggggggggggggtgttgtcactgaatgtgctctttca 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91 GGGGTCCCTGGCAATATTACTGTATACATAATTCTGCTACCTCCACGCCTCCAGGTC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  909 gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatcctgggg-- 966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  325 GTGTAGTGAATG-----GGGGGAGGGTGGTGGGTTTTGTCACTGAACAAATTTT--- 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.4%; Score 96.2; DB 10; Length 430; 64.7%; Pred. No. 2.3e-11; tive 0; Mismatches 103; Indels 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 43), Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Genoscope
Genoscope - Centre National de Sequencage
      Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
   Seq primer: -28ml3 revl ET from High quality sequence stop: 409.
                                                               Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL513947 431 bp
AL513947 LTI_NFL006_PL2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:12777441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prime, mRNA sequence.
AL513947
AL513947.1 GI:127774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 231; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4 A AL513947/C LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                           /note="Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker: Site_1: Not I; Site_2: Eco RI; Equal amounts of plasmid DNA from three normalized libraries (fetal lung NbHL19W, testis NHT, and B-cell NCI_CGAP_GCBI) were mixed, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified CDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of I.M.A.G.E. clones 297480-302087, 682632-687239, 78408-728711, and 729096-731399. Subtraction by Bento Soares and M. Fatima Bonaldo. "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus. I (bases 1 to 430)
Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Gelsel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Morris,M., Theising,B., Wylle,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vs34d01.rl Stratagene mouser Tcell 937311 Mus musculus cDNA clone
IMAGE:1140097 5' similar to gb:M23504 Mus musculus T cell secreted
protein (MOUSE);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            969 ga------cacaggggacaggagaaaagggtcagagatgctgttgtctgccact 1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1019 cagcagetggeceteagecaageagtaatttattgttttteettgtatttaaagttaaga 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       234 TCGGACCTCATCCGAGGCAGGGTCAGGAGGGGCAGAACAGCCGCTCCTGTCTGCCAGC 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The Mashu-HHMI Mouse EST Project
Unpublished (1996)
Contact: Marra MyMouse EST Project
Washu-HHMI Mouse EST Project
Washu-HHMI Mouse EST Project
Washington University School of Medicinep
444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Faz: 314 286 1800
Fax: 314 286 1810
Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 96.4; DB 13;
Pred. No. 2.1e-11;
); Mismatches 36;
                                                                                  /clone_lib="Soares_NFL_T_GBC_S1"
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                            /clone="IMAGE:1505308"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1079 aataaaatatgttatcaaagagttaata 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 TATTAAATATGTTAGCAAAGAGTTAATA 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 g
                                                                                                                     /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA646049.1 GI:2572478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.48;
74.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              430 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 155; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA646049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
AA646049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
```

원 à g

qq à

õ

264

209

5;

Gaps

23;

S

ö

```
1151 ccaggccggggggggggggggggggggggggggtgttgtcactgaatgtgctctttcactgacttt 1210
                                                                                              58.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tumor Gene Index
Unpublished (1997)
                                                                                                                  Matches 101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 70.4 Matches 107; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
AW129722/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                        ò
/db_xref="taxon:9606"
/clone="CLOBAG10xG04"
/clone="Lib="LTI_NFL006_pL2"
/tlssue_type="placenta"
/tlssue_type="placenta"
/tlssue_type="placenta"
/note="Vector: pCMVSPORT 6; Site_1: NotI; lst strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pCMVSPORT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact : Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax : (1) 301 610 8371
Email: filangth.invitrogen.com"
http://fulllength.invitrogen.com"
s3 a 109 c 89 9 118 t 52 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="CLUBAR0022512"
/clone="CLUBAR0022512"
/clone="Lib="LTI_NFL006_PL2"
/tissue_type="Placenta"
/note="Vector: pCWV8P0RT 6; Site_1: NotI; 1st strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco PV sites of the pCWV8P0RT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact: Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax: (1) 301 610 8371
Email : filang@ilitetech.com URL :
http://fulllength.invitrogen.com"
                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 300)
Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
Full.length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1197 ctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaaaa 1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL513837 300 bp mRNA EST 13-FEB-2001
AL513837 LTL_NFL006_PL2 Homo sapiens cDNA clone CL0BA002ZF12 3
AL513837
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.2%; Score 81.2; DB 105; Length 431; llarity 61.4%; Pred. No. 5.3e-08; Conservative 15; Mismatches 49; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL513837.1 GI:12777331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20 a
                                                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                        102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AL513837/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                 ORIGIN
```

QQ

g

à

qq

ò

```
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Trissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
Www-bio.llnl.gov/bbrp/image/image.html
Seq primer: -400P from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: uterus; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.48 kb. Life Technologies catalog #: 11542-016"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
I (bases 1 to 596)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="NCI_CGAP_Ut4"
/tissue_type="serous papillary carcinoma, high grade, 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3,
                                                                                              1190 atytyctettteaetygaetttyteaaaetygaageeagaaaataaagatygtygaeaagaga 1249
                                                                                                                                                                                                                                               xe23b0¯.xl NCI_CGAP_Ut4 Homo sapiens cDNA clone IMAGE:2607925 similar to SW:PRA_MYCLE P41484 PROLINE-RICH ANTIGEN ; contains element MSR1 repetitive element ;, mRNA sequence.
                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                            Score 80; DB 111; Length 596;
Pred. No. 1e-07;
0; Mismatches 45; Indels (
  Length 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 others
                                                   Indels
                                                   52;
6.2%; Score 81; DB 105; 58.4%; Pred. No. 5.6e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130 t
                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence stop: 201.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9606"
/clone="IMAGE:2607925"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pooled tumors"
/lab_host="DH108"
                                                20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW129722
AW129722.1 GI:6117666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.18;
```

ö

```
CNSO0JUP
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AI224992/C
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNT
                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1249
                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                          COMMENT
                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tumor Gene Index
Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausbergenih.gov
Life Technologies catalog #: 11548-013
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
Www-blo.llnl.gov/bbrp/Amage/Hmage.html
Insert Length: 1337 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: pancreas; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.72 kb. Life Technologies catalog #: 11548-013"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                          A1921379 407 bp mRNA EST 08-MAR-2000 wo24b03.xl NCI_CGAP_Pan1 Homo sapiens cDNA clone IMAGE:2456237 3' similar to contains element TAR1 repetitive element ;, mRNA
                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 407)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                 1192 gigototitoacigactitgicaaaciggaagccagaaataaagaiggigacaagagaaa 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57; Indels
6.1%; Score 79.8; DB 103;
66.7%; Pred. No. 1.1e-07;
Live 0; Mismatches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="NCI_CGAP_Pan1"
/tissue_type="adenocarcinoma"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141 t
                                                                                                              1271 aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2456237"
                                                                                                                                            35 АААААААААААААААААААААААААА 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seg primer: -400P from Gibco
High quality sequence stop: 391.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110 g
                                                                                                                                                                                                                                                                                                        AI921379.1 GI:5657343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 114; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                             sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                          uman.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loca
Matches
                                                                                                                                                                                                           AI921379/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                              RESULT
                g
                                                                             рp
                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
A1224992 248 bp mRNA EST 21-DEC-1998 qw95a10.xl NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:1998810 3' similar to TR:Q04154 Q04154 SALIVARY PROLINE-RICH PROTEIN RP15
Drosophila melanogaster genome survey sequence TET3 end of BAC: BACR39K04 of RPCI-98 library from Drosophila melanogaster (fruit fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aatgtgctctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagag 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1069 aaagttaagaaataaaaatatgttatcaaagagttaataataatatagaagagtagcctaaa 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254 AAAATCAANCAGGNGGNANGGGGAAAGAAGGNGGGGGCNNANGNGCNNAGNGNANTNNAGG
                                                                                                                                                   Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Ins
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 229; Length 967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          371 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 78.6; DB 229; Length
Pred. No. 2.2e-07;
0; Mismatches 110; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           رړ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="RPCI-98"
/clone="BACR39K04"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="end : TET3"
25 c 93 q
                                                                                                                                     Drosophila melanogaster
                                                                                     GI:4956338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.0%;
                                                                                                                                                                                                1 (bases 1 to 967)
Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 6.0
Best Local Similarity 52.8
Matches 123; Conservative
                                                                                     AL077063.1
                                                                                                                     fruit fly
```

ö

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AW089036/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                   FEATURES
   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Organ: stomach; Vector: pCMV-SPORT6; Site_1: Sal1; Site_2: Not1; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.69 kb. Life Technologies catalog #:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae, Homo.
1 (bases 1 to 319)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 248)
NCI-GGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A1950892 319 bp mRNA EST 09-MAR-2000 wx56f05.xl NCI_CGAP_Lu28 Homo sapiens cDNA clone IMAGE:2547681 3' similar to contains element MSR1 repetitive element ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="poorly differentiated adenocarcinoma with signet ring cell features" /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1143 gtgtgtggccaggccgggcgggtggggggggggggggtgttcactgaatgtgctctttca 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                182 GGGGGGCCCCCCCCGGGGGGGGGGGGGGGGTTTTTTCCCTCTTTTTCCCTCCC 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; contains TAR1.b2 MSR1 repetitive element ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 78.4; DB 17; Length 248;
Pred. No. 2.1e-07;
0; Mismatches 51; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134 t
                                                                                                                                                                                                                                                                                                                     Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                     // Organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:1998810"
/clone_lib="NCI_CGAP_Gas4"
                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                  Seg priner: -400P from Gibco
High quality sequence stop: 239.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AI950892.1 GI:5743202
                                                  AI224992.1 GI:3807705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.0%;
68.1%;
                                                                                                                                                                                                                                                                                                      unknown library type
Insert Length: 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11549-011"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55 c
                                                                                                                                                                                                             Tumor Gene Index
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 68.1
Matches 109; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tumor Gene Index
                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                            Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AI950892/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                     ORGANISM
                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
```

```
þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausbergenih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AW089036 351 bp mRNA EST 15-OCT-1999 xc79a04.xl NCI_CGAP_Brn35 Homo sapiens cDNA clone IMAGE:2590446 3' similar to contains element MSR1 repetitive element ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="two pooled squamous cell carcinomas"
/lab_host="DH10B"
/note="Organ: lung; Vector: pCWV-SPORT6; Site_1: SalI;
Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT.
Library constructed by Life Technologies."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml; Mammalia; Eutheria: Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 351)
NCI/NINDS-GAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute / National Institute of Neurological Disorders and Stroke, Brain Tumor Genome Anatomy Project (CGAP/BRGAP), Tumor Gene Index
                                                                                                                                                                                                                             Clone distribution: NCT-CGAP clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 357 Std Error: 0.00
Seq primer: -400P from Gibco
High quality sequence stop: 307.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1156 ccggggcgggtgggggggggggtgttgtcactgaatgtgctctttcactgactttgtcaa 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tissue Procurement: Chris Moskaluk, M.D., Ph.D., Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: Christa Prange, The I.M.A.G.E. Consortium DNA Sequencing by: Washington University Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 319;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 78.2; DB 104;
Pred. No. 2.4e-07;
0; Mismatches 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:9606"
/clone="IMAGE:2547681"
/clone_lib="NCI_CGAP_Lu28"
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .319
/organism="Homo sapiens"
                           Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1276 aaaaaaaaaaaaaaaaaaaaaaaaaa 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 AAAAAAAAAAAAAAAAAAAAAAAA 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AW089036
AW089036.1 GI:6044873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 6.0%;
Best Local Similarity 70.7%;
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
```

```
75
                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AI609594/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Seq primer: -40UP from Gibco
High quality sequence stope: 342.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="LTI_NELO06_PL2"
/tissue_type="placenta"
/note="vector: pcwvsporr 6; Site_1: NotI; 1st strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco Rv sites of the pcwvsporr 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact : Feng Liang Life Technologies,
                                                                                                                                                                                                                                                     /note-"Organ: brain; Vector: pCWV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.33 kb. Tumor types include: meningloma, oligodendroglioma, astrocytoma (grade II), medulloblastoma, astrocytoma (grade IV). Life Technologies catalog #: 11544-012"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166 GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGTTTTGGGTCAGGGGTTTTGGCT 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL514843 1290 bp mRNA EST 13-FEB-2001
AL514843 LTI_NFL006_PL2 Homo sapiens CDNA clone CL0BB0142F09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope - Centre National de Sequencage
BP 191 91006 EYRX cedex - France
Email: segreféqenoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                                         /clone="IMAGE:2590446"
/clone_lib="NCI_CGAP_Brn35"
/tissue_type="tumor, 5 pooled (see description)"
/lab_bost="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 1290)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 78.2; DB 110;
Pred. No. 2.4e-07;
0; Mismatches 53; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CLOBB0142F09"
                                                                                                                                          /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                              /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL514843.1 GI:12778336
                                                                                                                                                                                                                                                                                                                                                                                                                                                          6.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prime, mRNA sequence.
AL514843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 110; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                              54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AL514843/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
```

q ò q ò g

```
R. Emmert-Buck, M.D., Ph.D. CDNA Library Preparation: Life Technologies, Inc. CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: www-blo.llnl.gov/bbrp/Amage/Amage.html
Insert Length: 949 Std Error: 0.00
                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AI609594 339 bp mRNA EST 14-MAY-1999
tw28d06.x1 NCI_CGAP_Ov35 Homo sapiens cDNA clone IMAGE:2261003 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Tissue Procurement: Christopher A. Moskaluk, M.D., Ph.D., Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: ovary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: Not!; This library represents the normalized version of NoI_GAP_0v23. Cloned unidirectionally. Primer: Oligo dT. Average insert size 0.86 kb. Tumor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 339)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              types include: mixed Mullerian tumor, papillary serous, clear cell, spindle cell. All are primary tumors, metastasis positive. Constructed by Life Technologies." 66 c 79 g 118 t lothers
                                                                                                                                                                                                                                                                                                               .1198 tttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaaaa 1257
     Drive
610 8371
                                                                                                                                                                                                                                                                                                                                                               194 TITGIGIGIGICONCAGAGACNCTGIGIGIGIGIGIGIGIGIGIGICOTCTCTCTGIGIGIC 135
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. 339

/organism="Homo sapiens"

/db.xref="taxon.9606"

/clone="IMAGE:2261003"

/clone="Ib="NoI_CGAP_Ov35"

/tisus=_type="tumor, 5 pooled (see description)"

/lab_host="DH10B"
                                                                                                                                                                                                           Length 1290;
                                                                                                                                                                                                                                                             ö
54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 105;
                                                                                                                                                                                                           Score 78.2; DB 10
Pred. No. 2.8e-07,
4; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: -40UP from Gibco
High quality sequence stop: 337
POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                           6.0%;
64.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI609594.1 GI:4618761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tumor Gene Index
Unpublished (1997)
                                                                                                                                                                                                                                                             Matches 107; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA sequence.
                                                                                                                                                                                                                                     Similarity
                                                                                                            Ø
                                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AI609594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human
```

σ

q ò ο

```
1297 aaaaaa 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 AAAAAA 12
                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                              RESULT 15
AW074172/c
                                                                                                DEFINITION
                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                     ACCESSION
                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                      COMMENT
                                                                                     LOCUS
                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
Li, Wass, 1 to 506,
Li, Was., Gruber, C., Jessee, J., and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1197 ctttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaaa 1256
                                                                                   1158 9999c999t999999999999t9tt9tcactgaatgtgctctttcactgactttgtcaaac 1217
                                                                                                                                  AL514437 506 bp mRNA EST 13-FEB-2001 AL514437 LTLNFL006_PL2 Homo sapiens cDNA clone CL0BB0102A08 3 AL514437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                              Gaps
                                                                                                153 GGGGTAGGGGGGGGGGGGGTTTTTTTTTTTTTTCCCCTTTTAAAAAAA 94
                                                                                                                                                Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@enoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch 6.0%; Score 77.6; DB 105; Length 506; al Similarity 62.7%; Pred. No. 3.5e-07; 104; Conservative 9; Mismatches 53; Indels 0;
                                   Length 339;
                                                            Indels
                                      3e-07;
                                 Ouery Match 6.0%; Score 77.8; DB 22; Best Local Similarity 71.0%; Pred. No. 3e-07; Matches 103; Conservative 0; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CLOBB010ZA08"
                                                                                                                                                                                    aaaaaaaaaaaaaaaaaaaaa 1302
                                                                                                                                                                                                 AL514437.1 GI:12777931
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               156
                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                               RESULT 14
AL514437/c
LOCUS
                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                   1278
                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                        ρp
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δò
```

```
AW074172 733 bp mRNA EST 13-OCT-1999 xb08g08.xl NCI_CGAP_GU1 Homo sapiens cDNA clone IMAGE:2575742 3' similar to SW:CYPH_CRILO P14851 PEPTIDYL-PROLYL CIS-TRANS ISOMERASE A ;contains element MSR1 repetitive element ;, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Seg primer: -40UP from Gibco
High quality sequence stop: 248.
                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 733) NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap. NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap. National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /lab_host="DH10B"
//note="Organ: genitourinary tract; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tumor Gene Index

Contact: Robert Strausberg, Ph.D.

Tel: (301) 496-1550

Email: Robert Strausbergenih.gov

Tissue Procurement: Chris Moskaluk, M.D., Ph.D., Michael R.

Emmert-Buck, M.D., Ph.D. cDNa Library Preparation: Life

Technologies, Inc. cDNa Library Preparation: Life

T. Consortium DNa Sequencing by: Christe Prange, The

Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1177 gigitigicacigaaigigetetiteacigaetitigieaaaciggaageeagaaalaaaga 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9606"
/clone="IMAGE:2575742"
/clone_lib="NCI_CGAP_GUI"
/tissue_type="2 pooled high-grade transitional cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 733;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68; Indels
5.9%; Score 77.2; DB 110;
63.4%; Pred. No. 4.5e-07;
tive 0; Mismatches 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157 g
                                                                                                                                                                                                                                                                                                AW074172.1 GI:6029170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 63.4 Matches 118; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tumors"
                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
```

ö

ð

Search completed: May 13, 2001, 11:40:07 Job time: 16482 sec

us-09-451-527-91.rst

Run on:

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF244915
HUMIL13A
HUMIC130
1 134548
A 29948
A 29948
A 29931
1 58488
A AF072807
A 29930
A 29931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97,616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10
88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                          gb_sts1:*
gb_sts2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_htg23:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_pr8:*
gb_pr9:*
                            em_pl:*
em_ro:*
                                                       em_sts:*
                                                                                                                                   qb_sts3:
                                                                                em_un:*
                                                                    em_sy:*
                                                                                                                                                 *: ζε_dg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_pr1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_pr4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246.8
246.8
246.8
245.2
245.2
245.2
245.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Result
                                                                         May 13, 2001, 14:20:29 ; Search time 9342.78 Seconds (without alignments) 620.362 Million cell updates/sec
                                                                                                                                                          1 atggcgctctggttgactgt.....atcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                      2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                          1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_other:*
em_htg_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htgo_hum:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_hum8:*
em_htg_inv1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htg_inv2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_htg_hum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_htg_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htg_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_hum7:*
                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htgo_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_htg_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_hum6:*
                                                                                                                               US-09-451-527-94
393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *:9mnq_ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_pat1:*
                                                                                                                                                                                                                                                                                                                                                                                      gb_ba1:*
gb_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_pat2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_in:*
em_om:*
em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                             gb_in1:*
gb_in2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_in3:*
                                                                                                                                                                                                                                                                                                                                                                                                                 gb_ba3:
                                                                                                                                                                                                                                                                                                                                                                          GenEmbl:*
                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                          Sequence:
                                                                                                                                                                                                                          Searched:
```

L06801 Homo saplen X69079 H.saplens i 134548 Sequence 1 AF043334 Homo sapl A29948 Coding sequ 158488 Sequence 15 AF072807 Bos tauru A29950 Nucleic aci

AF244915 Canis fam

Description

T58489 Sequence 17 A29931 Sequence co

```
A29930 Sequence Co
15841 Sequence 2
15845 Sequence 2
15845 Sequence 26
M23504 Mus musculu
134549 Sequence 3
126913 Rattus Norv
AF276990 Canis fam
L42080 Homo sapien
L13029 Human inter
U31120 Human inter
U31120 Human inter
CO31120 Human inter
ACOG439 Homo sapi
ACO74127 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
                 I86198 Sequence 4
A52326 Sequence 1
AR027062 Sequence
I86195 Sequence 1
                                                                                                                                                                                   AJ132441 Bos tauru
L42079 Homo sapien
L13028 Mouse inter
                                                                                                                                                                                                                                                                   I58483 Sequence 10
M33952 Rat neurona
U42976 Rattus norv
                                                                                                                                                                                                               AC005742 Homo sapi
AC005742 Mus muscu
AC020886 Mus muscu
                                                                                                                                                                                                                                                  I58485 Sequence 12
A29939 Sequence co
158494 Sequence 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
                                                                                                                                                                                                                                          A29941 Oligonucleo
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
1 (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                AL359215 Streptomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length cDNA and
expression of biologically active recombinant protein
J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                       AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="GI:7528274"
                                                                                                                                                                                                                                                                   I58483
RATNACHRR5
RNU42976
                                                                                                                     HUM11DC99Z
                                                                                                                                                                                             HUM11DC98Z
                        A52326
AR027062
1 186195
A29930
1 158481
I 158495
MUSSTCPE
                                                                                                  RATIL13A
AF276990
                                                                                                                               HUMIL13B
HSU10307
                                                                                                                                                HSU31120
AC004039
                                                                                                                                                                  AC074127
AC074127
                                                                                                                                                                                                                      AC005742
AC020886
158494
AR027065
186198
                                                                                                                                                                                    BTA132441
                                                                                                                                                                                                                                                  I58485
A29939
                                                                                                                                                                                                                                                                                                                                                                                                         AF244915.1 GI:7528273
                          90
                 10
                                                      9
10
10
10
                                                                                                                                                                                                                                                010010
                                                                                                                                                                                             993
94
96
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .447
                                                                                                                                                                         78469
3520
                                                                                                                                                                                                                                                 60
102
102
1008
2461
                                                                                                                     3714
4600
4740
5670
50282
78469
                                                                                                                                                                                                                      159500
237823
                                                                                                                                                                                                                                                                                                                                                                                                                                     Canis familiaris
                                                                                                            213343
                                                                        Yang, S.
                                                                                                                                                                                                                                                                                                                                                                                                                              dog.
AF244915
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                             333
334
337
337
338
447
443
443
444
453
                                                                                                              υo
                                                                                                                                                                          O
                                                                                                                                                                                             ပ
```

```
ö
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostoml; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. [ (bases 1 to 1270) McKenzie, A.N.J. Culpepper, J.A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., de Vies, J.E., Banchereau, J. and Zurawski, G.R. Interleukin-13, a T cell-derived cytokine that regulates human moncoyte and B cell function Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                      241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 300
                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                      112 AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 171
                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cytokine; growth factor; interleukin 13; regulatory protein. Homo sapiens cDNA to mRNA. Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                            181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                      ö
                                                                                                                     Length 1302;
                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                  100.0%; Score 393; DB 7;
100.0%; Pred. No. 3.9e-91;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361 gtaaggggagtttatcgccatggaaatttcaga 393
                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="G1:186276"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                340 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                          448. ....
318 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L06801.1 GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335 c
                                                                                                                                     Best Local Similarity 100.0
Matches 393; Conservative
                                                                                                                                    Similarity
                                                  σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ಡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polyA_site
BASE COUNT
                                                                                                                     Query Match
                                3'UTR
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
HUMIL13A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

```
polyA_signal
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                  sig_peptide
                                                                                                                                                                                                                                                                                                                    mat_peptide
                                                                                                                                                                                                                                                                                                                                                        variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches, Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE 1 Cases I to 1281 House, Derocq, J.M., Dumont, X., Guillemot, J.C., Kaghad, M., Labit, C., Leplatois, P., Liauzun, P., Miloux, B., Minty, C., Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                              cagaatc -- agg catccctctg caa cgg cat ggtg tg tg ag cgt caa cct ga ccg cc 177
                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                        284
                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                         344
                                                                                                                                                                                                                                                                                                                               agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 357
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-FEB-1997
                                                                                 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                             ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                          aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcc
                                                                                                                                                                                                                                                                                            3;
                                    Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRI
                                   DB 93;
                                                          82;
                                               2e-53;
                         62.8%; Scor.
78.4%; Pred. No. 2.
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="NC30; alternative"
15. .455
                                                                                                                                                                                                                                                                                                                                                                             tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                   405 CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and immune responses
Nature 362 (6417), 248-250 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      nsNC30 1282 bp mRNA
H.sapiens interleukin-13 mRNA.
X69079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 x69079.1 GI:297787
                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .ymphokine.
                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minty, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Caput, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sig_peptide
                                                          309;
                                    Query Match
                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION .
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                       121
                                                                                                                                                                                                                               178
                                                                                                                                                                                                                                                      225
                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                      285
                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                                                                                                             358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSNC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                               Op
                                                                                                      a
                                                                                                                               ò
                                                                                                                                                      qq
                                                                                                                                                                                                 g
                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                              ŏ
```

```
/translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQPVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                      /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
/note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                       /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 agocottgtgactcoctccccaaccotcaaggagotcattgaggagotggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 cagaatc---aggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 ATGCCCCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCTTTGGCGGCTTTTGCCTCCCCA 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcc 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 246.8; DB 9;
Pred. No. 1.9e-53;
0; Mismatches 82,
                                                                                                          /db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                      /db xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="NC30; alternative"
117. .452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          311
                                                  /evidence-experimental
/protein_id="CAA48823.1"
/db_xref="G1:580330"
                                                                                                                                                                                                                                                                                /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="GI:673420"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356. .860
/note="ATTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          337
                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1153. .1157
/note="ATTTA m
1264. .1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        373. .877
'note="ATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1134. .1138
/note="ATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62.8%;
78.4%;
                                                                                                                                                                                                    /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117. .452
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                57. .116
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="NC30'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 78.4
Matches 309; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293
```

of

```
/translation="MALLETTVIALECEGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTORMLGGFCPHKVSAGQFSSL
HVRDTKIEVAOFVKDLLLHLKKLFREGRFN"
 Submitted (15-JAN-1998) Protein Engineering, General Institute Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong, Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagaatc...aggcatccctctgcaacggcagcatggtgggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTA 363
                                                                                                                                                                                      1. .417
/organism="Homo sapiens"
/db_xref="taxon:9606"
/db_ltype="PHA-treated peripheral blood leukocyte"
1. .417
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                      /PCR_conditions="94C-1min, 50C-1min, 72C-3min, 30
DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 ATGCCCTTTTGTTGATCACCACGGTCATTGCTTCACTTGCCTTTGCCTTTGCCTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62.4%; Score 245.2; DB 88; Length 417; 78.2%; Pred. No. 5.5e-53; .ive 0; Mismatches 83; Indels 3;

    Second PCR:
    forward primer (5'-ctcatggcgcttttgttgaccacg-3')
    reverse primer (5'-gatgctttcgaagtttcagttgaa-3')
    Location/Qualifiers

                                                                                    forward primer (5'-ctcaatcctctcctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctctgc-3')
                                                                                                                                                                                                                                                                                                                                                                                                                          precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            364 CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                       /product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="interleukin 13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(394. .417)
/note="second PCR"
121 c 108 g
                                                                                                                                                                                                                                                                                                                      /note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                         1. .24
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IL13"
64. 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64. .399
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                      /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 308; Conservative
                                    Sosa-gu, Bucheor
Nested PCR:
1) first PCR :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4. .63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                       primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304
   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                      FEATURES
                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 417)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF043334 417 bp mRNA PRI 21-FEB-1998
Homo sapiens interleukin 13 precursor (IL13) mRNA, complete cds
AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105 GGCCTGTGCCTCTACAGCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165 CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                  (bases 1 to 1290)
Culpepper, J., McKenzie, A., Dang, W. and Zurawski, G. Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                    62.8%; Score 246.8; DB 10; Length
78.4%; Pred. No. 1.9e-53;
Live 0; Mismatches 82; Indels
                                                                                                                      PAT
u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5596072
                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
335 c 336 g
                                                                                                   Sequence 1 from patent US 5: 134548 I34548.1 GI:1875777
                                                                                                                                                                                                                                                                                                                                                                     336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF043334.1 GI:2905619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jang, J.S. and Kim, B.E. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 309; Conservative
                                                                                                                                                                                                                                      Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                        Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
AF043334
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
```

178 225

121

ö g ò Dp ò g ò 셤 ò g à qq ò g

298

;;

Gaps

3;

9 63 243

ORGANISM

KEYWORDS SOURCE

AUTHORS • TITLE '

REFERENCE

cycles;

source BASE COUNT ORIGIN

PEATURES

TITLE JOURNAL

ORGANISM

RESULT I34548 LOCUS

ð g REFERENCE AUTHORS Ŋ

```
Bos taurus
                                                                                                                                                                                               ø
I58488
I58488.1
                                                   Unknown
                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                      source
                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                          JOURNAL
 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
             VERSION
KEYWORDS
                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF072807
LOCUS
                                                                                                                                                       FEATURES
                                                                                                                 TITLE
                                      SOURCE
                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                         /codoi_start=1
/transl_table=11
/product="protein with cytokine like activity"
/product="protein with cytokine like activity"
/product="1249029"
/db_xref="G1:1249029"
/translation="MHPLANDLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIBELVNITONOKAPLCGSNVWSINLTADMYCAALBSLINVSGCSAIEKTQRMLSG
FCPHKVSAGOFSSLHVRDTKLEVAQFVKDLLLHLKKLFREGRFN"
341 c 336 g 311 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷
                                                                                                                                     artificial sequence.

1. (bases 1 to 1297)

Caput,D., Ferrara,P., Guillemot,J.C., Kaghad,M., Labit-le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having cytokin type activity, recombinant DNA coding for
Prish protein, transformed cells and microorganisms
Patent: EP 0506574-A 21 30-SEP-1992;
ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 cagaatc··-aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                  23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3;
                                                           Coding sequence for protein with cytokine like activity A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9;
                                                                                                                                                                                                                                                                       construct"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 245.2; DB Pred. No. 5e-53; ); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tatgtaaggggagtttatcgccatggaaatttca 391

    1297
    /organism="synthetic c/db_xref="taxon:32630"

                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                62.48;
78.28;
                                                                                     A29948.1 GI:1249028
                                                                                                             synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 308; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                               309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
                                             LOCUS
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                     REFERENCE
                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                         TITLE
                      RESULT
A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

07-0CT-1997

PAT

I58488 1297 bp DNA Sequence 15 from patent US 5652123.

LOCUS DEFINITION

RESULT 158488

```
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 343)
Trigona,W.L., Brown,W.C. and Estes,D.M.
Functional implications for signaling via the IL4R/IL13R complex on
bovine calls
                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea;
Bovidae; Bovinae; Bos.
                                                                                                                                                        coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 ATGCCCCTTTTGTTGACCACGCTCATTGCTCTCACTTGCCTTTGCCTCCCCA 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          agigaacgcagacaccaaaatigaagigatcaatiggigaaaaaccigcicacc 357
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JAN-2000
partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117 GGCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagaatc---aggcatccttctgcaacggcatggtgtggagcgtcaacctgaccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                          1 (bases 1 to 1297)
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatcis,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                            .
ش
                                                                                                                                                                                                                                                                                                                                                  Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF072807 343 bp mRNA MAM MAM AF072807 (IL-13) mRNA, AF072807.1 GI:4558813
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72 (1-2), 73-79 (1999)
                                                                                                                                                                                                                                                                                                                                                                                        83;
                                                                                                                                                                                                                                                                                                                                                      DB 10;
                                                                                                                                                                                                                                                                                                                                                  Score 245.2; DB
Pred. No. 5e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 343)
Trigona,W.T., Hirano,A. and Estes,D.M.
                                                                                                                                                                                                                                                                         u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417 CATTTAAAGAAACTTTTTGGGGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                   /organism="unknown"
341 c 336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunol. Immunopathol.
                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                    62.48;
78.28;
GI:2477726
                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 78.2
Matches 308; Conservative
                                                                            Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vet. Immu
20080132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10614495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
```

ï

```
Similarity
                                                                       Similarity
              ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
             97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Sim
Matches 262;
                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                       Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                         292
                                                                                                                                                                                                                                                                                                                                       352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                             316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                          158489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                           q
                                                                                                                                                                       g
                                                                                                       ò
                                                                                                                                                  ò
                                                                                                                                                                                               δλ
                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                             /translation="MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITONOK
VPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSE
                                                                                                                                                                                                                                                                                                    ij
                          S
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
Direct Submission
Submitted (16-JUN-1998) Veterinary Pathobiology, University of
Missouri-Columbia, W213 Veterinary Medicine Building, Columbia,
                                                                                                                                                                                                                                                                                                                                                                  agcoctgtgactcoctcocaacctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms Patent: EP 0506574-A 23 30-SEP-1992; ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                   181 AGCATGTACTGTGCAGCCCTGGACTCCCTGATCTCCAACTGCAGTGTCATCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                               1 Argecercrarreaccecercarrerrerrerrerrecrecrececea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 384)
Caput,D., Ferrara,P., Guillemot,J.C., Kaghad,M., Labit-le
                                                                                         /cell_type="activated peripheral T lymphocytes"
1. .>343
                                                                                                                                                                                                                                                                                                    ä.
                                                                                                                                                                                                                                                                               Length 343;
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        298 agtgaacgcagccgagacaccaaaattgaagtgatccagttgg 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="interleukin-13 precursor"
/protein_id="AAD22748.1"
/db_xref="G1:4558814"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
                                                                                                                                                                                                                                                                          Score 219.8; DB 7;
Pred. No. 2e-46;
0; Mismatches 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="synthetic construct"
                                                                                                                                                                                                                                ų
                                                                                                                                                                                                                                79
                                                                  /organism="Bos taurus'
/db_xref="taxon:9913"
                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acid fragment B. A29950
                                                                                                                                                   /codon_start=1
                                                                                                               /gene="IL-13"
                                                                                                                                      /gene="IL-13"
                                                                                                                                                                                                                    YVRDTKIEVAQF"
101 c
                                                                                                                                                                                                                                                                           Ouery Match
Best Local Similarity 79.6%;
Matches 273; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A29950:1 GI:1249030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            synthetic construct.
synthetic construct
artificial sequence.
                                                                                                                          .>343
                                  65211, USA
                                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A29950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
A29950
LOCUS
DEFINITION
                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
TITLE
JOURNAL
                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                          CDS
                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A. protein having interleukin 13 activity, recombinant DNA coding for this protein, transformed cells and microorganisms Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                           291
                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                               115 atcacccagaatc---aggcatccctctgcaacggcagcatggtgggagcgtcaacctg 171
                                                                                                                                                                                                                                76 ATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTG 135
                                                                                                                                                                                                                                                                                                                                                                                      351
                                                                                                                                                                                                                                                                                                                                                                                                                    315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                          Gaps
                                                                                                                                       55 teceegageetgtgaeteeeteeceaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                              172 accyccyycatytactycycayctctagaatctctyatcaatytctccyactycaycycc 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 teceegageeetgtgaeteeeteeceaaeeeteaaggageteattgaggagetggteaae 114
                                                                                                                                                       115 atcacccagaatc---aggcatcctttgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-0CT-1997
                                                                                                                                                                                                                                                                                atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg
                                                                                                                                                                                                                                                                                                                                                                                                    256 TTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 384;
                                                                          Length 384;
                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Guillemot, J., Kaghad, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                ctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                         75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 204; DB 10;
Pred. No. 2.3e-42;
); Mismatches 75;
                                                                          9;
                                                                          Score 204; DB 9;
Pred. No. 2.3e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
              84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5652123
/db_xref="taxon:32630"
104 c 99 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
104 c 99 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 17 from patent (158489)
                                                                          51.98;
77.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.9%;
77.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 384)
Caput, D., Ferrara, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        I58489.1 GI:2477727
                                                                                                         Matches 262; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unclassified.
```

~

ij

Gaps

., m

DEFINITION

A29931 rocns ACCESSION KEYWORDS SOURCE

VERSION

ORGANISM

REFERENCE AUTHORS

JOURNAL FEATURES

TITLE

61

238

298

241

29-SEP-1999

for

196 292

qq ò a ò Q

232

352

```
1 (bases 1 to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic
microcranisms in the presence of arginine
Patent: US 5856142-A 4 05-JAN-1999;
                                                             1 (bases 1 to 336)
Caput.D., Ferrara.P., Guillemot.J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 24 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                              gecetytgaetecetececaaeceteaaggageteattgaggagetggteaacateaece 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122 GCATGTACTGTGCAGCCCTGGATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gecteceegageeetgtgaetteeeteeeeaaeeeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggtttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                              2 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                  Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 425;
                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                               Score 203.4; DB 10;
Pred. No. 3.3e-42;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 202.2; DB 9
Pred. No. 6.7e-42;
0; Mismatches 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               359 atgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4 from patent US 5856142. AR027065.1 GI:5027077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66
                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                              /organism="unknown"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="unknown"
116 c 110 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                               51.8%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51.5%;
76.4%;
                                                                                                                                                                                                                                                                          Ouery Match
Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best_Local Similarity 76.4 Matches 262; Conservative
                                Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
Unclassified.
                                                                                                                                                                                                                  ๗
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ø
        .
Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52
                                                                  REFERENCE
                                                                               AUTHORS
                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AR027065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                 FEATURES
                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ij
                                                                                                                                                                                                                                                                                                                                            l (bases 1 to 336)
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gcctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                               23-JUN-1995
               ||| | | ||||||||||||||||||||||| ATCGAGAAGGTCTCAGCTGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                              atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacttg
                                                                               256 TTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 336;
                                                                                                                                                                                                                              A29931 336 bp DNA PAT 23.
Sequence coding for the mature cytokine like protein.
A2931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT
                                                                                                                                              ctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 203.4; DB 9
Pred. No. 3.3e-42;
0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            359 atgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158494 336 bp DNA
Sequence 24 from patent US 5652123.
158494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="synthetic co
/db_xref="taxon:32630"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 51.8%;
Best Local Similarity 77.8%;
Matches 259; Conservative (
                                                                                                                                                                                                                                                                                         A29931.1 GI:1249019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            I58494.1 GI:2477732
                                                                                                                                                                                                                                                                                                                             synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
```

BASE COUNT ORIGIN

62

ô

q δ g ò q δy q δ a ò Ωp

122

179

239

ä

Gaps

<u>ښ</u>

12

RESULT I58494

302

299

DEFINITION

LOCUS

ACCESSION VERSION

```
1078
                                                                                                                                                                                                                                                                                                                                                                                                           terminator
                                                                                                                                                                                                                                                                                                                                                                                                                      terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                            terminator
                                                                                                                                                                                                                                                                                                                                                    promoter
                                                                                                                                                                                                                                                                                                                                                                                    misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_RNA
                                                                                                                                                                                                                                                                                                                   source
                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                         15
                                                        DEFINITION
                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                               5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      632
                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                         FEATURES
                       RESULT
A52326
LOCUS`
                                                                                                                                                                                                       COMMENT
                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 425)
Legoux,R., Maldonado,P. and Salome,M.
Method for the extraction of periplasmic proteins from prokaryotic
microorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
                                                                             ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
55 GCCTTGGCTGCCCTGTGCCTCCCAGTACTGCCCTCAGGAGCTCATTGAGGAGCTGGTC 114
                                 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                   234
                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288
                                                      115 AACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAAC 174
                                                                                                                                              294
                                                                                                                                                                               52 gcctccccgagccctgtgactcccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aacatcacccagaatc---aggcatccttctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295 CAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGAC 354
                                                                                           289 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                                                                                          gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 202.2; DB 10; Length
Pred. No. 6.7e-42;
0; Mismatches 78; Indels
                                                                                                                                                                                                                           349 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         349 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 355 CIGCICITACATITAAAGAAACITITICGCGAGGGACGGITCA 397
                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                            DNA
US 5700665.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="unknown"
116 c 110 a
                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                      Sequence 4 from patent US 186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 51.5%;
Best Local Similarity 76.4%;
Matches 262; Conservative
                                                                                                                                                                                                                                                                                                                             GI:3205916
                                                                                                                                                                                                                                                                                                                                                                       Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                             186198.1
                                                                                                                                                                                                                                                                                                                                                    Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                          LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                            169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                        229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289
                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                      RESULT
186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                           g
                                                                                                                                                                                                                                  qq
          셤
                                                    g
                                                                                                Q
                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                 ò
                                                                            Qγ
                                                                                                                        ò
                                                                                                                                                                    ò
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
/note="GENE CODANT POUR LE REPRESSEUR DE L'OPERON LACTOSE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283. .337
/note="SEQUENCE DE LA REGION 5' NON TRADUITE DU MESSAGER"
                                                                                                                                                                                                 Legoux,R., Maldonado,P. and Salome,M.
Process of extraction of periplasmic proteins from prokaryotic
microorganisms in the presence of arginine
Patent: EP 0725140-A 1 07-AuG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     338. .762
/note="SEQUENCE CODANT POUR LE PRECURSEUR DE L'IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gootcoccgagocotgtgactcoctcccaaccotcaaggagotcattgaggagotggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                 12-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51.5%; Score 202.2; DB 9; Length 4410; 76.4%; Pred. No. 5.6e-42; 1ve 0; Mismatches 78; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PHAGE T7
                 PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1013. .1253
/note="TERMINATEUR DU PHAGE FD"
1254. .2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="TERMINATEUR DU GENE 10
                                                                                                                                                                                                                                                                              SANOFI SA (FR)
Other publication SK 10696 960904
Other publication CZ 9600290 960814
Other publication JP 842879 960924
Other publication FI 960427 960801
Other publication FI 312543 960805
Other publication RR 2729972 960801
Other publication CA 2168382 960801
Other publication AU 4224496 960808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3R 327"
1094 t
A22326 4410 bp DNA
Sequence 1 from Patent EP0725140.
A52326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="unidentified"
/db_xref="taxon:32644"
11...282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2506. .4410
/note="SEQUENCE DE PBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1096 g
                                                                          A52326.1 GI:2851987
                                                                                                                                                         unclassified.
1 (bases 1 to 4410)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1142 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 76.4
Matches 262; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .4410
                                                                                                                   unidentified unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
```

1

- qq δy
- Search completed: May 13, 2001, 14:20:33 Job time: 19113 sec

low adenosin adenosine re low adenosin

Human

Human adenosine re Sequence encoding

Canine interleukin Human low adenosin Human adenosine re

interleukin

Canine mature inte

low adenosin adenosine re low adenosin

Human

Human Human

adenosine re

Нишап

Cytokine NC30. Q Gly41-Cytokine cod Asp41-Cytokine cod Sequence encoding

low adenosin low adenosin Human adenosine re Human adenosine re

Нишап

Human

Human interleukin Cellulose binding Cellulose binding Laccase gene. Myc

Laccase gene. Myc Myceliophthora the

Myceliophthora the M. thermophila lac Dominant-negative

neuronal nic neuronal nic

Human

Cytokine signal se Cytokine signal se Plasmid pZPC13 enc

Minimum DB : Maximum DB :

Database

Searched:

Canine interleukin

OM nucleic

on:

Run

Sequence:

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autolmmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling
                         Z55554
Z55553
F21334
                                                                                                                      F21332
A35210
                                                                                                                                                                                                                       A35211
F21338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A35215
Z55552
Q28942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z32227
T74283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224236
V48405
Q14288
V12201
                                                                                                                                                                      056692
                                                                                                                                                                                                                                                                         A35216
                                                                                                                                                                                                                                                                                                  028947
                                                                                                                                                                                                                                                                                                                       028944
                                                                                                                                                                                                                                                                                                                                                028943
                                                                                                                                                                                                                                                                                                                                                                         056693
                                                                                                                                                                                                                                                                                                                                                                                                                         F21337
                                                                                                                                                                                                                                                                                                                                                                                                                                              A35209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              028941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          006086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                r72106
                                                                                                                                                                                                                                                                                                                                                                                                F21331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255557 standard; cDNA; 393 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US11942
     13
11
20
20
18
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                272
1270
1270
1282
1282
1290
6952
6952
14978
                                                                                                                                                                                                                                                                                                                                             336
1212
5670
5670
5670
5670
166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2249
2300
33187
3192
3192
3192
772
1521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris.
                                                                                                                                                                                                                                                                                             Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999.
2178
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
22748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
20748
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ა
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
255557
ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   interleukin
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   interleukin
interleukin
                                                                                                                                                                                           (without alignments)
486.052 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                  atggcgctctggttgactgt.....atcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgnl_8/gcgdata/geneseq/geneseqn/Na1993_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1983_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1985_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1986_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1986_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1989_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1989_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1999_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1999_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1992_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1992_DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1992_DAT:*
                                                                                                                                                                 May 13, 2001, 14:29:52; Search time 472.02 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canine Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgnl_8/gcgdata/geneseq/geneseqn/NA1997_DAT:*/cgnl_8/gcgdata/geneseqn/geneseqn/NA1998_DAT:*/cgnl_8/gcgdata/geneseqn/geneseqn/NA1998_DAT:*/cgnl_8/gcgdata/geneseqn/geneseqn/NA2000_DAT:*/cgnl_8/gcgdata/geneseqn/geneseqn/NA2001_DAT:*/cgnl_8/gcgdata/geneseqn/geneseqn/NA2001_DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgnl_8/gcgdata/geneseq/geneseqn/NA1994.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1995.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1996.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N_Geneseq_0401:*
: /cgnl_8/gcgdata/geneseq/geneseqn/NA1980.DAT:*
: /cgnl_8/gcgdata/geneseq/geneseqn/NA1981.DAT:*
: /cgnl_8/gcgdata/geneseq/geneseqn/NA1982.DAT:*
                      4.5
Compugén Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                         678276 seqs, 291890651 residues
                      version 4
- 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Listing first 45 summaries
                                                                                                                      sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255557
255558
255558
255555
255556
255563
255563
255563
255563
255563
255563
255563
255563
                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC Gaport 1.0
                      GenCore
Copyright (c) 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     П
                                                                                                                 - nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100
                                                                                                                                                                                                                                                                  US-09-451-527-94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     393
393
1302
1302
390
390
1269
1269
333
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1000.0
1000.0
1000.0
95.9
95.9
95.9
84.7
864.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                114 ... 115 ... 115 ... 116 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ... 120 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sed
                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393
393
393
377
377
377
337
333
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
```

Claim 11; Page 232-233; 264pp; English

mature inte mature inte

O O υ

Result ٠ و mature inte

Wonderling RS;

Dreitz MJ,

Sim G,

(HESK-) HESKA CORP Yang S,

29-MAY-1998; 28-MAY-1999; 02-DEC-1999

2000-072623/06

P-PSDB; Y58221.

99WO-US11942. 98US-0087306

WO9961618-A2

```
ö
                                                                                                                                                                                                                                                                 allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                     and 78 respectively. The invention relates to canine or feline Fit-3 ligand, canine or feline Fit-3 ligand, canine or feline CD134 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 agocottgtgactcoctcoccaaccetcaaggagetcattgaggagetggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 cagaatcaggcatccctctgcaacggcagcatggtgtgggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 acccagaggatgctgaaagcactgtgctctcaaaagcccgggggagggcagatttccagt 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acccagaagatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 393;
                                      sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                   Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 393; DB 21;
100.0%; Pred. No. 3.3e-103;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
25558/c
ID 25558 standard; CDNA; 393 BP.
XX
AC 25558;
XX
DT 14-MAR-2000 (first entry)
XX
C anine interleukin-13 (IL-13) clox
XX
KW Interleukin-13; IL-13; antibody;
XX
XX
XX
XX
XX
XX
XX
XX
Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.
Best Local Similarity 100.
Matches 393; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

```
Sequences 25552-25560 and 255561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine CD40, canine or feline CD40 (interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated inmunoregulatory proteins. The prophlactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agcoctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggcagatttccagt 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autolmmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 393; DB 21;
100.0%; Pred. No. 3.3e-103;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                     Claim 11; Page 233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 393; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
```

ô

m

33

g

RESULT 255555

```
Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z55556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
255556/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coquences encoding canine interletes to canine and 78 respectively. The invention relates to canine confidence and 78 respectively. The invention relates to canine confidence of feline Fit-73 ligand, canine or feline col54 (cod0 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GWCSF), and nuclecties which encode these immunoregulatory proteins. The proteins their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and in detection, and in detection, and also be used in detection.
                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 393; DB 21; Length 1302;
Pred. No. 4.9e-103;
Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequences 255552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                       Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wonderling RS;
Claim 11; Page 229-230; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match 100.0%;
Best Local Similarity 100.0%;
Matches 393; Conservative 0;
                                                                                                                                                          Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98us-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product= '
                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52..447
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9961618-A2
                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G,
                                                                                                                                                                                                              255555;
```

```
231
                                                                                                                                                                                      300
                                                                                                                                                                                                                                        301 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                       Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80. and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-13 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
                                                                                                                                                          291
                                                                                                                                                                                                  52 atggegetetggttgaetgtggteattgeteteacetgeeteggtggeettgeeteeeg 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                          241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt
                                                                                                                                181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling RS;
                                                                                                                                                                                                                                                                                             361 gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                           Claim 1i; Page 231-232; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                       Z55556 standard; cDNA; 1302 BP
```

; 0

ö

Gaps

0;

98US-0087306

29-MAY-1998;

```
interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including tallergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for and in detection, and in detection, and in the proteins may be used in detection, and is a sources.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1071 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGCGCCCATCCAAAGG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 393; DB 21;
100.0%; Pred. No. 4.9e-103;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z55563 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.
Best Local Similarity 100.
Matches 393; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Z55563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 755563 XX XX AC 25 Ca XXX LD XXX LD XXX LD XXX LD XXX Ca X
          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
caquences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
CE 11-4, canine or feline Fit-1 3 ligand, canine or feline CD40, canine or feline encoding canine or feline cD40, canine IL-13, feline
CE interferon-alpha (IFN-alpha) and feline granulocyte macrophage
CE interferon-alpha (IFN-alpha) and feline granulocyte macrophage
CE interferon-alpha (IFN-alpha) and feline granulocyte macrophage
CE colony stimulating factor (GMCSF), and nucleotides which encode these
CE interferon actions. The proteins. Their associated
CE nucleic acids, specific antibodies and inhibitors may be used as
CE vaccines for therapeutic or prophylactic regulation of an immune
CE response in animals (particularly cats, dogs, horses and humans).
CE They may be used to treat autoimmune or infectious diseases including
CE allergies, tumours, inflammation and graft rejection, and to increase
CE can also be used for the recombinant production of a protech, while
CE nucleic fragments are useful as probes, as amplification primers and
CE as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CE modulators of activity, while the antibodies may be used in detection,
CE and in the control of a protein may be used and the action, and to screen for and in the control of a cativity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                    Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoImmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agcoctgtgactcoctoccoaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acccagaggatgctgaaaagcactgtgctctcaaaaagcccgcggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 390;
                                                                                                                                                                                                                                          Seguences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 377; DB 21;
Pred. No. 1.2e-98;
0; Mismatches 0;
                                                                  Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                        Claim 1i; Page 238-239; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95.9%;
                                                                  Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 95.9
Best Local Similarity 99.2
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                                                                  WPI; 2000-072623/06
                                (HESK-) HESKA CORP.
                                                                  Yang S,
                                                                                                                    P-PSDB; Y58223
                                                                    ຕ່
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          358
                                                                    Sim
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
```

ï

RESULT Z55564/c

94

34

S

255564;

```
allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antiqen. The nucleotide sequences an also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine in the invention relates to canine or feline Filt-3 ligand, canine or feline CD40, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allowing themselves.
acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt 300
                                                                                                                                                                                 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                   93 GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= a
/product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wonderling RS;
                                                                                                                                                                                                                                                                       gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                              Claim 1i; Page 235-236; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
57..449
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                               Z55561 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0087306.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sim G,
                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7
Z55561
                                                                                          241
                                                                                                                                                                               301
                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                g
                                                                                     ò
                                                                                                                                                                                 ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequences encoding canine interieur, 13.7 (11-13) clones 80
and 78 respectively. The invention relates to canine
11-4, canine or felline Flt-3 ligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
colony-stimulating factor (GMCSF), and nucleotides which encode these
clony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins associated
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The prophlactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 377; DB 21; Length 390;
Pred. No. 1.2e-98;
0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim li; Page 239; 264pp; English.
255564 standard; cDNA; 390 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 95.9%;
Best Local Similarity 99.2%;
Matches 390; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; Y58223
                                                                                                                                                                                                                                                                                       WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAY-1998;
                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                   02-DEC-1999.
```

330 61

qq ŏ q ò qq

o,

Sim

```
2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                    1093
                                                                                                                                                                                                                                                                                                                                                                                                                                            916
                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          856
                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
255559
ID 25
  q
                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                   ά
                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                           ÷
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                         121 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                             240
                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                               atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                           <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune rest
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                           Length 1269;
                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                         Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                   Seguence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                           ;
0
                                                            Score 377; DB 21;
Pred. No. 1.8e-98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Canine IL-13 clone
                                                                                                                                                                                                                                                                          393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling RS;
                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                        414 gtaaggggagtttatcgccatggaaatttcaga 446
                                                                                                                                                                                                                                                                          gtaaggggagtttatcgccatggaaatttcaga
                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
complement (821..1213)
                                                                                                                                                                                                                                                                                                                              BP.
                                                           Ouery Match 95.9%;
Best Local Similarity 99.2%;
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                             255562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product=
                        and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-DEC-1999
                                                                                                                                                                                                                                                                                                                                            Z55562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G,
                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                              RESULT
Z55562/c
                                                                                                                                                                                                                                                                                                                                                                                                                             Key
                                                                                                        g
8888888
                                                                                          ð
                                                                                                                                    g
                                                                                                                                                                 pp
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                   ò
                                                                                                                                                                                               QQ
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                 ç
                                                                                                                                                                                                                                             ò
```

```
Sequences 25552-25560 and 255561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine in the control of the sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention or felline CD160, canine or felline Fli-13 ligand, canine or felline CD154 (CD40 ligand), canine IL-5, canine IL-13, felline interferon-1apha (IRN-alpha) and felline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, fumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for and in druction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1153 AGCCCTGTGACTCCCTCCCCAACCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCAC 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agooctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
   ids encoding immunoregulatory proteins from cats or dogs, treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGTCAACCTGACCGGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     973 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGCGGGG---GATTTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 377; DB 21;
Pred. No. 1.8e-98;
0; Mismatches C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 11; Page 237-238; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 95.9
Best Local Similarity 99.2
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255559 standard;
Nucleic acids
useful for tre
```

g

Canine mature interleukin-13 (IL-13) clone 80 cDNA.

```
241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                    361 gtaaggggagtttatcgccatggaaatttcaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                              255560/c
                                                                      qq
                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
11-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline
conference and the Flt-3 ligand, canine or feline CD40, canine or
feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and inhibitors may be used as
concluded frespentic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
concludes, tunnours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                              Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
4.4e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84.7%; Score 333; DB 100.0%; Pred. No. 4.4 tive 0; Mismatches
                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1i; Page 233-234; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84.7%,
100.0%; Pre
0;
                                                                                                                                                                                                  99WO-US11942.
                                                                                                                                                                                                                                    98US-0087306
                                                                                                                                                                                                                                                                                                          Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                               2000-072623/06
                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP.
                                                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; Y58222
                                                                                                                         W09961618-A2
                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                                                                             02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     333;
                                                                                                                                                                                                                                                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
```

```
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-13 ligand, canine IL-13, feline
IL-4, canine or feline Fit-13 ligand, canine IL-13, feline or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony stimulating factor (GMSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-25550 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 333; DB 21;
Pred. No. 4.4e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
Claim 11; Page 235; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84.7%; 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                                                           Z55560 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; Y58222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                  14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sim G,
                                                                                                                                                                                                                                                                255560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

ö

gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360

301

g

g

δ d ò QQ Ω ω

```
8888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coquences encoding canine interletivin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-2 ligand, canine IL-13, feline or feline Fit-2 ligand, canine IL-3, feline or feline Fit-2 ligand, canine IL-13, feline or feline colfs4 (CD40 ligand), canine IL-2, canine IL-13, feline or feline colfs4 (CD40 ligand), canine IL-3, and nucleotides which encode these interferon-alpha (IFN-alpha) and feline granulocyte-macrophage
colony-stimulating factor (GMSF), and nucleotides which encode these immunoregulatory proteins. The proteins may be used as nucleic acids, specific antibodies and inhibitors may be used as concines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                             214
                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease % \left( 1\right) =\left\{ 1\right\} =
                                                                                                                                                                                                                                                                   atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canine mature interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 239-240; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Z55565 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nucleic acids encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255565;
                                                                                                                        273
                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33
                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                               Ω
                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Op
```

```
1;
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                  cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                  Gaps
                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                      cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                             61 agocotgtgactcocccaaccotcaaggagotcattgaggagotggtcaacatcaco
                                                                                                                                                                                            acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                э;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mature interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                    Length 330;
                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                         Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                 Score 317; DB 21;
Pred. No. 1.7e-81;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtaaggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page 241; 264pp; English
                                                                                                                                               ö
                                                                                                                 Query Match
Best Local Similarity 99.1%;
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            z55566/c
ID 255566 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                             and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z55566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    298
                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                              181
```

98US-0087306

```
29-MAY-1998;
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                           the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides) The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
           and 78 respectively. The invention relates to canine or feline CD154 (CD40 ligand), canine or feline Flt-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRV-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the contract of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagaatcaggcatccctctgcaacggcagcatggtggaagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330 AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  150 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGGGGGGG---GATTTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80.7%; Score 317; DB 21; Length 330; 99.1%; Pred. No. 1.7e-81; ive 0; Mismatches 0; Indels
  sequences encoding canine interleukin-13 (IL-13) clones 80
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canine interleukin-13 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255554 standard; cDNA; 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cal Similarity 99.1 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                               and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
caquences encoding canine interletions (11-13) clones 80
and 78 respectively. The invention relates to canine
TL-4, canine or felline Fit-3 ligand, canine or felline CD40, canine or felline
TL-4, canine or felline Fit-3 ligand, canine IL-3, felline
The CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides may be used as
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 agccctgtgactccctcccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                          Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 agccctgtgactccctcccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                          Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70.7%; Score 278; DB 21;
100.0%; Pred. No. 2.2e-70;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                      Wonderling RS;
                                                                                                                                                                                                                                                             Claim 11; Page 229; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP
                                                         MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255553 standard; cDNA; 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     278; Conservative
                                                         Yang S, Dreitz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                             WPI; 2000-072623/06
(HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
Z55553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 XXEXEX
XXDXDXXXX
```

ö

Human low adenosine antisense oligonucleotide related sequence #2901.

(first entry)

14-MAR-2001

F21334;

F21334 ID F21334 standard; DNA; 1270 BP.

```
caquences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
L1-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline CD40, canine IL-3, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are usedful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
and in druct parefiting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 gctggtcaacatcacccagaatcaggcatccttgcaacggcaggaggtgtgggaggt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 caacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease % \left( 1\right) =1
   SS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          225 cagegecatecaaaggaeceagaggatgetgaaageactgtgeteteaaaageeegge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                             Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 272 BP; 64 A; 91 C; 69 G; 48 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69.2%; Score 272; DB 21;
100.0%; Pred. No. 1.2e-68;
live 0; Mismatches 0;
                                                                                                                                                                                                                                                   Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                          Claim 11; Page 228; 264pp; English.
                                                                                                                                           99WO-US11942.
                                                                                                                                                                                                                                                   Yang S, Dreitz MJ,
                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 69.2
Best Local Similarity 100.
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug targetting
                                                                                                                                                                                                                                                                                    WPI; 2000-072623/06.
                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                  Canis familiaris.
                                                                   WO9961618-A2
                                                                                                                                           28-MAY-1999;
                                                                                                                                                                              29-MAY-1998;
                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                 Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        165
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
coligonucleotides and compositions tow accurate (A) content antibeense oligonucleotides the A is replaced by a 'Universal' or alternative base. C(I) can have respiratory, bronchodilator, antibilinflammatory, analgesito, antipastive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (I) can be used to down-regulate the expression and or activity of target polypepitides associated with undy-respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, central ceptors, adenosine receptors, bradykinin receptors, central nervous system peptide ceptors, adenosine receptors, bradykinin receptors, central nervous and non-nervous system peptide antisense oligonucleotides may be used in this way to treat disorders antisense oligonucleotides may be used in this way to treat disorders and/or surfactant hypoproduction (especially pulmonary obstruction (especially pulmonary obstruction (especially pulmonary obstruction (especially pulmonary distress syndrome and/or surfactant hypoproduction which are associated with a disease or condition selected from pulmonary vasoconstriction, allergics asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary conditions emphysama, chronic obstructive pulmonary disease (CDD), pulmonary infections, bronchtis, and or and antisense oligonucleotides used in the exemplification of the present invention present invention
                                                                                                                                                        Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 present invention describes low adenosine (A) content antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 1336; 1592pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-MAR-2000; 2000WO-US08020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0127958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYEC-) UNIV EAST CAROLINA. (NYCE/) NYCE J W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-679539/66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200062736-A2
                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                               cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nyce JW;
181 cagogocatocaaaggacocagaggatgotgaaagcactgtgototoaaaagcocgoggo 240
```

qq ò 15

RESULT

```
SQ Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;
```

1;														
Query Match 62.8%; Score 246.8; DB 21; Length 1270; Best Local Similarity 78.4%; Pred. No. 3.2e-61; Matches 309; Conservative 0; Mismatches 82; Indels 3; Gaps	atggagctctggttgactgtggtcattgctctcacctgcctcggtggccttgcttccccg	alyycycilligicgaccacygicallyciclcactiyccilygcygcittycciccca	agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120	ggcctgtggctccttacagcctcagggagctcattgaggagctggttgttcaacatcacc 164	cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177	cagaaccagaaggctccgctctgcaatggcatggtatggagcatcaacctgacagct 224	ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237		aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaaggcagatttcc 297	aagacccagaggatgctgagcggattctgcccgcacaaggtctcagctgggcagttttcc 344	agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 357	agettgcatgtccgagacaccaaaatcgaggtggcccagtttgtaaaggacctgctctta 404	tatgtaaggggggtttatcgccatggaaatttca 391	405 catttaaagaaactttttgcgagggacggttca 438
Query Match Best Local Matches 30		n #	61	105	121	165	178	225	238	285	298	345	358	405
On. Ber	0 y	an ·	ΟŊ	qq	Qy	qq	οy	qq	ΟŊ	qq	Qy	qq	οy	QQ

Search completed: May 13, 2001, 14:29:54 Job time: 18309 sec

```
REFERENCE/DOCKET NUMBER: DX03
TELECOMUNICATION INFORMATION:
TELEPHONE: 415-82-9196
TELEFAX: 415-46-1200
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: cDNA
                                                                                                                                                                           May 13, 2001, 14:21:14 ; Search time 226.02 Seconds (without alignments) 303.596 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Appli
Sequence 26, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 12, Appli
Sequence 12, Appli
Sequence 10, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Appl:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 15, Sequence 17, Sequence 24, 1
                                                                                                                                                                                                                                                                                                                                                                                 1 atggegetetggttgaetgt......ategeeatggaaattteaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1, A
26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             605242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Issued_Patents_NA:*
1: /cgnl_7/ptodata/1/ina/5A_COMB.seq:*
2: /cgnl_7/ptodata/1/ina/5B_COMB.seq:*
3: /cgnl_7/ptodata/1/ina/6A_COMB.seq:*
4: /cgnl_7/ptodata/1/ina/6B_COMB.seq:*
5: /cgnl_7/ptodata/1/ina/PCTUS_COMB.seq:*
5: /cgnl_7/ptodata/1/ina/pcoMB.seq:*
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-371-121-26
US-08-012-543-3
PCT-US93-07645A-3
PCT-US93-07645A-3
US-08-371-121-12
US-08-371-121-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US93-07645-1
US-08-371-121-15
US-08-371-121-24
US-08-371-121-24
US-08-906-957-4
US-08-906-957-4
US-08-906-957-1
US-08-906-957-1
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-371-121-11
US-08-371-121-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-814-052-19
US-08-814-052-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-083-485-1
US-09-005-397-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-939-218A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PCT-US95-06815-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-940-661A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                           - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                   US-09-451-527-94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2249
2300
3183
3187
3192
3192
3192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425
4410
4410
336
447
1212
1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  662.4
5511.8
5511.8
5511.8
5511.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
5611.8
561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB :
Maximum DB :
                                                                                                                           OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 725522210084327654327652525252525776543765437765437765437765437765437765437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
```

Ĥ

Pred. No. 1.2e-66; ); Mismatches 82;

```
Best Local Similarity
Matches 309; Conserv
                                                                                                                                                                              165
                                                                                                                                                    121
                                                                                                                                                                                                         178
                                                                                                                                                                                                                                                               238
                                                                  g
                                                                                             δ
                                                                                                                       g
                                                                                                                                                                                                         à
                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                        121 cagaatc -- aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                    345 AGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTA 404
                                                                                                                                    1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                               165 CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCT
                                                                                                                                                                                                                                                                                                                                                                           285 AAGACCCAGAGGATGCTGAGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCC
                                                                                                            <u>ښ</u>
                                                                                 Length 1290;
                                                                                 DB 1;
                                                                                Score 246.8; DB 1
Pred. No. 1.2e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                               62.8%;
78.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 21-AUG-1992
INFORMATION FOOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                               Query Match 62.8°
Best Local Similarity 78.4°
Matches 309; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: HUN
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                            45..443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
            NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
PCT-US93-07645A-1
                                       US-08-012-543-1
                                                                                                                                                                                                                  g
                                                                                                                                                                                          ò
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                 P
                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
```

Length 1290;

DB 5;

62.8%; Score 246.8;

Query Match

```
61 agocotgigacicocicocoaaccoicaaggagoicatigaggagoiggicaacaicaco 120
                                                                                                                                                                                                                                                              cagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345 AGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTA 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                  1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                105 GGCCCTGTGCCCTCCCTCTACAGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                                                                                                                                                                                                                      225 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCAGTCCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                          285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 246.8; DB 5
Pred. No. 1.2e-66;
0; Mismatches 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405 CATITAAAGAAACITITICGCGAGGGACGGITCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Human Interleukin-13
MUBBEN OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application PC/TUS9307645; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.
SOFTWARE: Microsoft Word 5.1a
78.4%; Pie.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 62.8%;
Best Local Similarity 78.4%;
Matches 309; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
```

```
238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEFLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: MINTY, Adrian
APPLICANT: MAGAZIN, Warailyn
APPLICANT: MAGAZIN, Warailyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: Activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
297
                                                                   177
                                                                                                  224
                                                                                                                                   237
                                                                                                                                                  165 CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCT
                                                                                                                                 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                               238 aggacocagagatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcc
                                                                                                                                                                                                                                285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCC
                                                                                                                                                                                                                                                                  298 agigaacgcagacgagacaccaaaatigaagigaiccagtiggigaaaaaccigcicacc
                                                                 cagaatc---aggcatccttctgcaacggcatggtgtgtgtgagcgtcaacctgaccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                       358 tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FF92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3000 K Street, N.W., Suite Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 15, Application US/08371121 Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-D
SOFTWARE: PatentIn Release #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA: APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAPUT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Wa:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                               121
                                                                                                                                 178
                                                              δ
                                                                                             qq
                                                                                                                                                         g
                                                                                                                                                                                                                                                                                            QQ
                                                                                                                               ò
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                    à
```

```
APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEWOT, Jean-Claude
APPLICANT: LEBLATOLS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: MAGHAD, Mouraly
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 ArgacacrirrarranceAcacacarracrereAcriracerrageagacriracerecea 116
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcc
                                                                                                                                                                                                                                                                                                                                                                                 Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     83:
                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                 .7e-66
                                                                                                                                                                                                                                                                                                                                                                             Score 245.2; I
Pred. No. 3.7e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            358 tatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17, Application US/08371121
Patent No. 5652123
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOLEY & LARDNER
           TELEPAN. (202) 672-5300
TELEFAX. (202) 672-5399
TELET. 904136
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
               (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                               62.4%;
78.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: CAPUT, Daniel
                                                                                                                                                                                                                                                                                   mat_peptide
117..452
                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 308; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                    MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                     linea
                                                                                                                                                                                                                          NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                    ; LOCATION:
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                 FEATURE:
```

ij

```
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                 APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GLILEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: MAGAIN, MOUTEN
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     % 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY, AGENT INFORMATION:
NAME: SAXE, BEET NAMER: 28,665
REGISTRATION NUMBER: 28,665
TELECHONE: (202) 672-5399
TELECHONE: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FK92/0028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
Sequence 24, Application US/08371121 Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115 atcacccagaatc -- aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggagggcag 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256 TITICCAGCTIGCATGTCCGAGACACCAAAATCGAGGGGCCCAGTIGTAAGGACCTG 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55 teceegageeetgtgaeteeeteeeaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16 TCCCCAGGCCCTGTGCCTCCCTCTACGGCCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tch 51.9%; Score 204; DB 1; Length 384; al Similarity 77.1%; Pred. No. 1e-53; 262; Conservative 0; Mismatches 75; Indels
                                                                                                                                                                                         OPERATING SYSTEM: PC-DOS/MS-DUS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           316 CTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 355
                                                                                                                                                                                                                                                                                                                                                                                                   PRICE APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FF92/00280
FILING DATE: 27-MAR.1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 29-MAR.1991
ATTORNEY/AGENT INFORMATION:
AMANGE OF THE OFFICE OFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5399
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEX: 904136
INFORMATION FOR SEQ ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 384 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
Washington, D.C
                                                                                                                                                                                                                                                                                                                                           FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 262; Conserv
                                                                  20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-371-121-17
                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 рp
```

```
179 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 238
                                                                                                         62 gecetgtgaetecetececaaceeteaaggageteattgaggagetggteaacateaeee 121
                                                                                                                                    2 GCCCTGTGCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGACACATCACCC 61
                                                      Indels
Query Match 51.8%; Score 203.4; DB 1; Best Local Similarity 77.8%; Pred. No. 1.5e-53; Matches 259; Conservative 0; Mismatches 71;
                                                                                                                                                                                                                                                                 음
```

RESULT 6 US-08-371-121-24

S

```
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: SALOWE, March
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                      348
    115 AACATCACCCAGAACCAGAAGGCTCCGCTGCAATGGCAGCATGGTATGGAGCATCAAC 174
                                                                                      294
                                                                                                                                                                                                                                         Gaps
                                                                                                                                                          229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaggg
                                                                                                                                                                                                                  289 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                              ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          э
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                               349 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                       355 CTGCTCTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRINT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 202.2; DB 2;
Pred. No. 3.9e-53;
0; Mismatches 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
APPLICATION NUMBER: FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08906957 Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REI
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51.5%;
76.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 425 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 51.5
Best Local Similarity 76.4
Matches 262; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Alexandria STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 06
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TOPOLOGY: li
; MOLECULE TYPE:
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22314
                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                              169
                                                                                                g
                                                                                                                                                                                                                                                       g
                                                            ò
                                                                                                                                        ŏ
                                                                                                                                                                            g
                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ij
122 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                          239 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagattcca 298
                                                                                                                                    299 gigaacgcagccgagacaccaaaaitgaagigaiccagiiggigaaaaaccigcicacci 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112 aacatcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                          52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55 GCTTCGCTGGCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                .,
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 202.2; DB 1
Pred. No. 3.9e-53;
                                                                                                                                                                                                                                       302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEE: Bacon & Thomas
: 625 Slaters Lane - Fourth Floor
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                359 atgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FR 95 01083 FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTR:.
ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
"""""FR: IBM PC COMPALIBLE
""""" PC-DOS/MS-DY
                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/08594469
Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: RETELECOMMUNICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: DNA (genomic) US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51.5%;
llarity 76.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: FICHTER, Richard E REGISTRATION NUMBER: 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1: 425 base pairs
nucleic acid
DEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 262; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                 US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
                                                                                                                                                                                                                                                                                                               RESULT
                                                        ò
                                                                                            рp
                                                                                                                                                                      g
                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

1;

ä

```
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONE, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
NUMBER OF INVENTION: presence of arginine
CORRESPONDENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                    289 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaac 348
                                                                                         52 gectececgagecetgtgaetecetececaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                          169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                 229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                  3;
              Length
                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         349 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               692 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 734
Score 202.2; DB 1;
Pred. No. 9.1e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/906,95°
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FR 95 01083 FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 1, Application US/08906957
; Patent No. 5856142
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: RETELECOMMUNICATION INFORMATION:
            51.5%;
76.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: FICHTER, Richard E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4410 base pairs
                                                  Matches 262; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Virginia
: USA
                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                              Best Local
                                                                                                                                                                      δy
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Method for the extraction of TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the TITLE OF INVENTION: presence of arginine NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                   288
                                                                                                                                                                                                                                                                        289 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaac 348
                              112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtgggagcgtcaac 168
                                                                                                               169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                        52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                                                               229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggg
                                                                                                                                                                                                                                                                                                                                                                                                          349 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                              355 CIGCICITACATITAAAGAAACITITICGCGAGGGACGGIICA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 625 Slaters Lane - Fourth Floor CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08594469 Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-594-469-1
                                                                                                                                                                                                                                                                                      g
                                                                                                                           g
                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                       ò
                                                                                                                                                                      ò
```

```
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: CAPUTA, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: ERRARA, Pascual
APPLICANT: EBLACT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY Adrian
APPLICANT: MAGHAD, Mourad
APPLICANT: MAGHAD, Mourad
APPLICANT: MAGHAD, Marille BOUTEILLER, Christine
APPLICANT: MAGAZIN MARILION:
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSE: FOLEY & LARDNER
                                                                                                                                                    Ξ;
                                                                                                                                                                                                                                                 112 aacatcacccagaatc---aggcatccttctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                  52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                   169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                           gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggggaggg 288
                                                                                                                                                                                                                                                                                                                                                                                                            cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                       3;
                                                                                                                 Length 4410;
                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgctcacctatgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                   DB 2;
                                                                                                                 51.5%; Score 202.2; DB 2 76.4%; Pred. No. 9.1e-53;
                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-00v-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08371121
Patent No. 5652123
                             ; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                  262; Conservative
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                         572
                                                                                                                                                                                                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                       229
                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62 gccctgtgactccctcccaacctcaaggagctcattgaggagctggtcaacatcaccc 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122 agaatc---aggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgccg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 GCCCTGTGCCTCCCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
Έ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 51..3%; Score 201.8; DB 1; Best Local Similarity 77.5%; Pred. No. 4.7e-53; Matches 258; Conservative 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KAGHAD, Mourad
LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359 atgtaaggggagtttatcgccatggaaatttca 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   302 ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 334
                APPLICATION
FILING DATE: 08-JAN-1.
FILING DATE: 08-JAN-1.
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 29-MAR-1991
ATTORNEY/ACENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REPREBOUE/DOCKET WINBER: 16781/3
FELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5399

"REFERAX: (202) 672-5399
                                                                                                                                                                                                                16781/383
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
MINTY, Adrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 26, Application US/08371121 Patent No. 5652123 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE: DNA (genomic)
US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
US-08-371-121-26
```

ï

```
-----tgtgactcctccccaacctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109 gtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtggggggtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70 Argeogereregereacrecaerecregererrecriecerregregereregeegeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 113; Indels
400 CTGCTCAGCTACACAAAGCAACTGTTTCGCCACGGCCCCTTC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IEE TOPY TAIL COMPUTER: COMPUTER: COMPUTER: COMPUTER: COMPUTER: COMPUTER: COMPUTER: COMPUTER: COMPUTER: CURRENT APPLICATION DAYS: APPLICATION NUMBER: US/08/012,543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 159.2; DI
Pred. No. 9e-40
                                                                                                                                                                                                                                                                                                                   Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
VENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                             DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PELICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
RAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UMBER: US/08/012,543
01-FEB-1993
                                                                                                                                                                                                                                 de Waal Malefyt, Rene
Heath, Andrew
                                                                                                       Sequence 3, Application US/08012543 Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                              901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
                                                                                                                                                                   Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                                                                                          Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40.5%;
ilarity 66.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1212 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70..465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 agcc---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                RESULT 13
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 268;
                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----ctgtgactccctcccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109 gicaacaicacccagaaicaggcaiccitcigcaacggcagcaiggigigigagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               169 AGCAACATCACACAACACCCAGACTCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGAC 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   229 CTGGCCGCTGGCGGGTTCTGTGTAGCCCTGGATTCCCTGACCAACATCTCCAATTGCAAT 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC----- 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109 GGGCCGGTGCCAAGATCTGTGTCTCTCTCTCTGACCCTTAAGGAGCTTATTGAGGAGCTG 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgctcacctatgtaaggggagtttatcgccatggaaatttc 390
                                                                                                                                                                 SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 159.2; DB 1,
Pred. No. 6.2e-40;
0; Mismatches 113,
3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/FR92/00280 FILING DATE: 27-MAR-1992 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16781/383
                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
                                                                                                  : Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FR 91 00137 FILING DATE: 08-JAN-1992 PRIOR APPLICATION DATA: APPLICATION NUMBER: FF 91 03904 FILING DATE: 29-MAR-1991 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 1678
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40.58;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                       Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                    CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 268; Conserva
                                                                                                                                             OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                            20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 agcc-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

5

Gaps

```
310 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC----- 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
                                                                                                                                                                                                                                                                                                                                                                            Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                     Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA: APPLICATION NUMBER: PCT/US93/C
                                                                                                                                                                                                                                                                                                                                                         COMPUTER: Apple Macintosh OPERATING SYSTEM: Macintos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40.5%;
66.7%;
                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Human
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
PCT-US93-07645-3
                                                                                                                                                                                                       RESULT 15
PCT-US93-07645-3
                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                 g
                                                                                                                    δ
                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5;
190 AGCAACATCACACAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGAC 249
                                  ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                           250 CTGGCCGCTGGCGGGTTCTGTGTAGCCCTGGATTCCCTGACCATCTCCCAATTGCAAT 309
                                                                                                                                                                                    61 agcc------tgtgactcoctcccaacctcaaggactcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109 gicaacaicacccagaaicaggcaiccicigcaacggcagcaiggigigigagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gccatccaaaggacccagaagatgctgaaagcactgtgctctcaaaagcccgcggcaggg 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                    gocatccaaaaggacccagaaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg
                                                                                                                110 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC-----
                                                                                                                                                                   cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgaccgccgcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 159.2; DB 5; Length Pred. No. 9e-40; 0; Mismatches 113; Indels
                                                                                                                                                                                                                                                      349 ctgctcacctatgtaaggggagtttatcgccatggaaatttc 390
                                                                                                                                                                                                                                                                                                                                                                                                          Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA: APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRICATION DATA:

APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1993
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: Macintosh 6.0.5 SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 66.7
Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                   JULT 14
1-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                 229
                                                                                                                                                                   289
                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                               δy
                                                         Q
                                                                                                 ολ
                                                                                                                                q
                                                                                                                                                               οy
                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
361 CCCACTACGGTCTCCAGCCTCCCGGATACCAAAATCGAAGTAGCCCACTTTATAACAAAA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289 cagatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaac 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 agcc-----ctgtgactccctccccaacctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaaagcccgcggcaggg 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
cagatttccagtgaacgcagccgaaaattgaagtgatccagttggtgaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109 gtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches 113; Indels
                                                                                   349 ctgctcacctatgtaaggggagtttatcgccatggaaatttc 390
                                                                                                       421 CTGCTCAGCTACACAAAGCAACTGTTTCGCCACGGCCCCTTC 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 159.2; DB
Pred. No. 9e-40;
```

5

Qy qq

Search completed: May 13, 2001, 14:21:17 Job time: 17828 sec

em\_esthum12:\* em\_esthum13:\* em\_esthum14:\*

em\_esthum16

em\_esthum15 em\_esthum17 em\_esthum18 em\_esthum20: em\_esthum21: em\_esthum23:

em\_esthum22

em\_esthum19

em\_esthum24: em\_esthum25:

em\_esthum26

em\_esthum27: em\_esthum28:

em\_estin1:

em\_esthuml0:\*

```
em_estro14:*
em_estro15:*
em_estro16:*
em_estro10:*
em_es
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_estin2:*
em_estin3:*
em_estin4:*
em_estin4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_estpl2:*
em_estpl3:*
em_estpl4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_estpl5:*
em_estpl6:*
em_estpl7:*
em_estpl8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_estro2:*
em_estro3:*
em_estro4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_estom1:
em_estom2:
em_estov1:
em_estov2:
                                                                                                                                                           May 13, 2001, 11:40:07; Search time 5997.24 Seconds (without alignments) 572.478 Million cell updates/sec
                                                                                                                                                                                                                                                                             US-09-451-527-94
393
1 atggcgctctggttgactgt.....atcgccatggaaatttcaga 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9623517 seqs, 4368049070 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum2:*
em_esthum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est39:*
gb_est40:*
em_estba:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_esthum1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_esthum8:'em_esthum9:'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est13:*
gb_est14:*
gb_est15:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est10:*
gb_est11:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est20:*
gb_est21:*
gb_est22:*
gb_est22:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est24:*
gb_est33:*
gb_est34:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum6:
em_esthum7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est12:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est36:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est17:
gb_est18:
gb_est19:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est37:
gb_est38:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est2:*
gb_est3:*
gb_est4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est6:*
gb_est7:*
gb_est8:*
gb_est9:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jp_est35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST:*
                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                           Sedneuce:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                    Run on:
```

em\_estpl10: em\_estrol:\*

em\_estp19:

em\_estpl1:

em\_estro6:\* em\_estro7:\* em\_estro8:\*

em\_estro5:

em\_estrol1: em\_estro9:\* em\_estrol0:

em\_estro13:

em\_gss\_rod1:\* em\_gss\_rod2:\*

em\_gss\_pro:\*

em\_gss\_rod5:\* em\_gss\_rod3:

em\_gss\_rod4

em\_gss\_vrt2:

1000. 1001.

gb\_gss1:\*

gb\_gss2: gb\_gss3:

gb\_gss4:\*

gb\_gss5: gb\_gss6: gb\_gss7:

gb\_gss8:\* gb\_gss9:\* gb\_gss10:\*

gb\_gssll: gb\_gssl2: gb\_gss13: gb\_gss14: gb\_gss16: gb\_gss17: gb\_gss18:

gb\_gss15

211: 2213: 2213: 2214: 2215: 2216: 2217: 219:

b\_gss19: gb\_gss20

gb\_gss21 gb\_gss22 b\_gss23

gb\_gss24 b\_gss26 gp\_gss2;

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                          Result
                                                                                                                                                                                                                                                                                                                                                                                                                                  Š.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est97:*
gb_est98:*
em_gss_fun:*
em_gss_hum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_gss_inv1:*
em_gss_inv2:*
em_gss_inv3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hum3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hum5:
               gb_est50:*
gb_est51:*
gb_est51:*
gb_est53:*
gb_est56:*
gb_est56:*
gb_est66:*
gb_est60:*
gb_est61:*
gb_est61:*
gb_est61:*
gb_est61:*
gb_est61:*
gb_est66:*
gb_est66:*
gb_est66:*
gb_est66:*
gb_est66:*
gb_est66:*
gb_est66:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_gss_hum2
                                                                                                                                                                                                                                                                                                                   gb_est103:*
gb_est106:*
gb_est106:*
gb_est106:*
gb_est66:*
gb_est68:*
gb_est68:*
gb_est71:*
gb_est71:*
gb_est71:*
gb_est91:*
gb_est91:*
gb_est91:*
gb_est91:*
                                                                                                                                                                                              9b_est80:*
9b_est81:*
9b_est81:*
9b_est83:*
9b_est84:*
9b_est86:*
9b_est86:*
9b_est86:*
9b_est89:*
9b_est89:*
9b_est89:*
9b_est89:*
9b_est100:*
9b_est100:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_gss_h
em_gss_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_gss_)
111188...
111188...
111188...
111188...
111188...
111188...
11188...
11188...
11188...
11188...
11188...
11188...
11188...
11188...
11188...
```

A2305110 1M0005P05
A7712497 UI-R-AFIAL300678 TECEROAGON
BE907816 601501924
BE292210 WHE2208\_A
AL053013 DrOSOPh11
BE593226 WSL\_99\_B0
AC001086 CIT-HSP-2
BE37229 DGL\_147\_B
BE9357229 DGL\_147\_B
BE9357229 DGL\_147\_B
BE9357229 DGL\_147\_B
BE739993 BP250023B
A444326 fb47h12.y
AW729623 6A\_Ea002
BE498968 WHED969\_G
AV387571 AV387571
BE536034 601062471
BE536034 601062471
BE536034 601062471
BF606532 273595 MA

CNSO402X CNSO24F6 BE907816 BF292210 CNSO091P BE93226 ABC93226 BE93226 BE93226 BF03993326 BF039933444326 AM729638 BE4444326

231 230 230 141 146 229 229 201 137 166

36.6 336.6 336.6 36.4 36.4 36.4

20 1119 167 29 136 14

35.00 35.00 35.00 4.00 4.00

em\_gss\_other:'

Description

AZ305110 AI712497

40 37.8

43.4

f

Query Match Length DB

Score

SUMMARIES

gb\_gss34:\*

gp\_gss33

```
/strain="Sprague-Dawley
                                                                                                                                                                                                                                              Query Match 11.0
Best Local Similarity 76.8
Matches 53; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Norway rat.
Rattus norveqicus
                                                                                                                                                                                                                                                                                                                                            | || || |||
573 GGCCGGTG 581
                                                                                                                                                                                                                                                                                                                              61 agccctgtg 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLYA-No.
                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus.
                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                         AI712497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                          ДQ
                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                  BF625277 HVSMEa000
BE032541 131940 MA
BE032543 131942 MA
AU066538 AU066538
BF620464 HVSMEc001
BE127683 DEPA1432
BE363650 WSL_64_G1
BE363650 MSL_64_G1
                                                                                                                                                                                                                                    SCU007.C0
HV_CED001
602140603
                             BE705147 Sc02_08f0
AZ201624 SP_0053_A
AA880435 vw89f07.r
                                                                              AW475303 un64b04.y
BF143984 601791238
BF625277 HVSMEa000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rm. 308, Blomedical Polymers Research Bldg., 20 S. 2030 E., SLC, UT 84112, USA
                                                            AU075583 AU075583
AW318852 un08d12.y
                                                                                                                                                                                   Tetraodon
                                                                                                                                                                                                       601512140
                                                                                                                                                                                                                           602096668
                                                                                                                                                                                                                 CSB004F06
                                                                                                                                                                                             601461167
                                                                                                                                                                                                                                                                   AL522415 AL522415
                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. L (bass. 1 to 581)

Dunn, D., Aoyaqi, A., Barber, M., Beacorn, T., Duval, B., Hamil, C., Islam, H., Longacre, S., Mahmoud, M., Meenen, E., Pedersen, T., Reilly and Wright, D., Weiss, R., Stokes, R., Tingey, A., von Niederhausern, A. Mouse whole genome scaffolding with paired end reads from 10kb
                                                                                                                                                                                                                                                                                                                                AZ3U5110 581 bp DNA GSS 29-SEP-2000
HMO05P05R Mouse 10kb plasmid UUGCIM library Mus musculus genomic
clone UUGCIM0005P05 R, DNA sequence.
AZ305110
                                                                                                                                                                                                                                               BE216356
BF685554
                                                                                                                                                                                   AL207789
                                                                                                                                                                                             BF037598
                                                                                                                                                                                                      BE889888
                                                                                                                                                                                                                 BE402120
                                                                                                                                                                                                                                     BE414190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C57Bcf6"
/strain="C57Bcf6"
/clone="UGC1M0005P05"
/clone_lib="Mouse 10kb plasmid UUGC1M library"
/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error: 0.00
Plate: 0005 row: P column: 05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plate: 0005 row: P column: 05
Seq primer: CACACAGGAAACAGCTATGACC
                                                                                                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Robert B. Weiss
University of Utah Genome Center
University of Utah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 581.
Location/Qualifiers
                                                                                                                     BE032543
AU066538
BF620464
                                                                                                                                                                                   CNS02PBO
                                                                                                                                                                                                                                    BE414190
                             BE705147
                                         AZ201624
                                                             AU075583
                                                                                                    BF625277
                                                                                                              BE032541
                                                                                                                                                               BE363650
                                                                                                                                                                         BE361027
                                                                                                                                                                                                      BE88988
                                                                                                                                                                                                                 BE402120
                                                                                                                                                                                                                                               BE216356
                                                                                                                                                                                                                                                       BF685554
                                                                                                                                                                                                                                                                  AL522415
                                                  AA880435
                                                                                                                                                                                                                                                                                                                                                                                       AZ305110.1 GI:10341800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Class: plasmid ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 801 585 5606
Fax: 801 585 7177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              plasmid inserts
                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                            house mouse.
  00008888887777
                                        source
                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                            RESULT 1
AZ305110
LOCUS
                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
 υ
                                                                                                                                                                                   ပ
```

```
was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with 74 DNA polymerase and 74 polymuclectide kinase. Adaptor oligonuclectides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pWD42 (gil4732114|gb|AF129072.1), a copy-number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to adaptored vector DNA, and transformed into chemically-competent E. coli XL10-Gold (Stratagene) cells and selected for ampicillin resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Scares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
University of Iowa
451 Eckstein Medical Research Building Iowa City, IA 52242, USA
Tel: 319 335 8250
Fax: 319 335 9565
Email: mgoarcs@blue.weeg.uiowa.edu
Dilgo-dT track not found, Not I site shown in beginning of sequence is likely internal to the message. cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                        (http://www.jax.org/resources/documents/dnares/). The DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
/lab_host="E. Coli strain XLIO-Gold, Tl-resistant, F-" /note="Vector: PWD42nv; Purified genomic DNA from M. musculus C57BL/6J (male) was obtained from the Jackson Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 463)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AI712497 463 bp mRNA EST 08-JUN-1999 UI-R-AFI-aap-b-12-0-UI.sl UI-R-AFI Rattus norvegicus cDNA clone UI-R-AFI-aap-b-12-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.0%; Score 43.4; DB 219; Length 581; 76.8%; Pred. No. 0.11; cive 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Research Genetics (www.resgen.com)
Seq primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome Rés. 6 (9), 791-806 (1996)
97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AI712497
AI712497.1 GI:5016297
```

4

us-09-451-527-94.rst

```
source
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
CNS024F6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                               /clone_lib="un-R-AFI"
/dev_stage="ddult"
/lab_host="bH10B (Life Technologies)"
/note="vector: pT7430-pac (Pharmacia) with a modified
polylinker; Site_l: Not I; Site_2: Eco RI; The UI-R-AFI
library is a normalized library constructed from 15 dpc
rat atrioventricular (AV) canal. The tag is a string of 5
nucleotides present between the Not I site and the
oligo-dT track. The library was constructed as described
                                                                                                                                                                                                  oligo-dr track. The library was constructed as described by Bonaldo, Lennon and Soares, Genome Research 6: 791-806 , 1996. Tissue provided by Jim Lin, Department of Biology, University of Lowa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a large
scale clone-end sequencing project of the Tetraodon nigroviridis
genome. For more information, please take a look at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Actinopterygii: Neopterygii; Teleostei; Buteleostei; Neoteleostei; Buryterygii: Ctenosquamate; Acanthomorpha; Buacanthomorpha; Holacanthopterygii; Acanthopterygii; Percomorpha; Tetraodontiformes; Tetraodontoidei; Tetraodontidae; Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 994)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C.,
Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F.,
Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fisher, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CNSO4OZX 994 bp DNA GSS 25-MAY-2000
Tetraodon nigroviridis genome survey sequence T7 end of clone
125F09 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255 rearrecrerceaccaccrerrrrereaccrrearearccrargacrrerrereceree 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  315 CCCTTAGTGTTTCACTCTGATGATCTGGTCCTCAGAACACAATATTGGCCCTGGGGCTACA 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 994)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                           Score 40; DB 24; Length 463; Pred. No. 0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50;
                  lone="UI-R-AF1-aap-b-12-0-UI"
                                                                                                                                                                                                                                                                                 TAG_LIB=UI-R-AF1
TAG_TISSUE=AV canal at 15 dpc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                              144 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS; genome survey sequence.
                                                                                                                                                                                                                                                                                                                                              92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                           TAG_SEQ=GAAGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL300678.1 GI:8177652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                           10.2%;
ilarity 58.3%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 994)
                                                                                                                                                                                                                                                                                                                                                  130 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
nes 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoscope
                                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CNS040ZX/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
```

Location/Qualifiers

FEATURES

```
This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostoml;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Eurypterygii; Ctenosquamata; Acanthomorpha; Euacanthomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 1016)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, C.,
Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and
Weissenbach, J.
Claraterization and repeat analysis of the compact genome of the
freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 1016)
cost-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C.,
Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F.,
Saurin, W. and Weissenbach, J.
                                                                                                                                                 /note="Genoscope sequence ID : COBG125CC05LP1~end : T7" 295\ c 325\ g 174\ t 2\ others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Genoscope sequence ID : COAG234Db03LP1-end : T7" 312\ {\rm c} 280\ g 183\ t 17\ {\rm others}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CNSO24F6 1016 bp DNA GSS 12-MAY-2000
Tetraodon nigroviridis genome survey sequence T7 end of clone
234H06 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244 TGGCTGTGCTCTTTCTTCCATCGGGACAACAAGGCCTTCGCTGCCCTCCTCACGCCGACC 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74 cetececaaceeteaaggageteattgaggagetggteaacateaceegaateaggeat 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184 FCGGGGCAAGTCTFCAGGAGTCTGTAGAGGACCTTGACCACATCTGTCATCTCCAGCTGC 125
                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                  14 tgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtgactc 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Holacanthopterygii; Acanthopterygii; Percomorpha;
Tetraodontiformes; Tetraodontoidei; Tetraodontidae; Tetraodon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                             DB 231; Length 994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134 ccctctgcaacggcatcgtgtggagcgtcaacctgaccgccggcat 182
                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            124 TCTGCTGTGATGGCAGCCTTGTCAAGATCACCGAGCAGAGCCAGGAAAT
1. .994
/organism="Tetraodon nigroviridis"
/organism="Taxon:99883"
/clone="125F09"
/clone_lib="G"

    1016
/organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"

                                                                                                                                                                                                                                                                                                                                                                      82;
                                                                                                                                                                                                                                                                                                      Score 37.8; DB
Pred. No. 4.6;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GSS; genome survey sequence. Tetraodon nigroviridis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="234H06"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL180699
AL180699.1 GI:7818756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                          9.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1016)
                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 51.5'
Watches 87; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
```

'n

```
Aegilops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                    158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                BF292210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                  LOCUS
                                                                             QQ
                                                                                                                                                 qq
                                                 δ
                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="NHH_MGC_70"
/tissue_type="epithelioid carcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: pancreas; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sall; Cloned unidirectionally. Primer: Oligo dT. Pverage insert size 1.1 kb. Library constructed by Life "mechanlogies."
                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "I (bases 1 to 576)

NIH-MGC http://mgc.nci.nih.gov/.
NIH-MGC http://mgc.nci.nih.gov/.
NIH-MGC http://mgc.nci.nih.gov/.
NIH-MGC http://mgc.nci.nih.gov/.
NIH-MGC http://mgc.nci.nih.gov/.
Unpublished (1999)

Contact: Robert Strausberg hh.D.
Tel: (301) 496-1550

Email: Robert_Strausberg@nih.gov
Tissue Procurement: ATCC
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/Link at:
http://image.lln.gov
Plate: LLAM9708 row: o column: 06
High quality sequence stop: 571.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                            BE907816 576 bp mRNA EST 20-OCT-2000 601501924F1 NIH_MGC_70 Homo sapiens CDNA clone IMAGE:3903965 5',
                                                                                                                                                                                               205 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg 264
                                                                                                                                  265 tgctctcaaaagcccgcggcaggcagatttccagtgaacgcagccgagacaccaaaatt 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98 ttgaggagctggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgt 157
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.4%; Score 36.8; DB 141; Length 576; 48.1%; Pred. No. 7.5;
                                               Length 1016;
                                                                                 Indels
                                                                                 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 112;
                                               9.4%; Score 37; DB 230; 54.9%; Pred. No. 7.7;
                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:3903965"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              147 g
                                                                                                                                                                                                                                                                                                                                                                                                                                BE907816.1 GI:10401759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Technologies.
174 c
                                                                                 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                              gaagtgatccagt 337
                                                                                                                                                                                                                                                                             GCGAGGAGACAAT 381
                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
les 104; Conserv
                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                 Query Match
                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38
                                                                               Matches
                                                                                                                                                                                                                                              325
                                                                                                                                                                                                                                                                             369
                                                                                                                                                                                                                                                                                                                              RESULT
BE907816
                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                              rocus
                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                            ò
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
/db_xref="taxon:4573"
/clone="WHE2208_A08_B16"
/clone="WHE2208_A08_B16"
/clone="Lib="Aegallops speltoides anther cDNA library"
/tissue_type="Anther"
/dev_stage="Premeiotic anthers"
/dav_stage="Premeiotic anthers"
/dav_stage="remeiotic anthers"
/dav_stage="remeiotic anthers"
/dav_stage="remeiotic anthers"
/fab_host="scoli SOLR"
/fab_host="remeiotic anthers"
/forte="Vector: Lambda Uni-2AP XR, excised phagemid:
Site_1: EcoRI; Site_2: XhoI; Plants were grown in a growth chamber at the University of California, Davato (Akhunov).
Premeiotic anthers were harvested, total RNA and poly(A)
RNA were prepared, from each tissue and then pooled, a cDNA library was made, and the cDNA clones were in vivo excised to give ppluescript phagemids in the TJ Close lab (Akhunov, Chin, Choi, Close, Fenton, Kianian, Otto, Simons, Zhang) at the University of California, Riverside.
Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2000)
Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific West Area, Western Regional Research Center
BOO Buchanan Street, Albany, CA 94710, USA
Tel: 5105595773
Fax: 5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Akhunov, E., Anderson, O.D., Chao, S., Chin, A., Choi, D. W., Close, T.J., Fenton, R.D., Han, P.S., Hsia, C.C., Kang, Y., Kianian, P., Lazo, G.R., Miller, R., Otto, C., Rausch, C.J., Seaton, C.L., Simons, K., Tong, J.C. and Zhang, D.

The structure and function of the expressed portion of the wheat genomes - Anther CDNA library from Aegilops speltoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Spermatophyta;
Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                         BF292210 329 bp mRNA EST 17-NOV-2000 WHE2208_A08_B16ZS Aegilops speltoides anther cDNA library Aegilops speltoides cDNA clone WHE2208_A08_B16, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Regilops speltoides"
/cultivar="F2 from 2-12-4-8-1-1-1-(1) x PI36909-12-811-(1
284 TCGCCCAGCTGGGCTTCAATACCGCTGATCAGCGCCTGGTATTATTGCGCCAGTTGGGCT 343
                                                                      217
                                                                                                                                  344 CCAAAGCGCGCCTCCGTTTCTGCCAGTGTTGTTCTTCCAAGGCAGCTTTCATGCTCAGCT 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence and low 20
                                                                  ggagogicaaccigaccgccggcatgiactgcgcagcictagaaictcigaicaaigict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aegilops speltoides
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; S
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence have been trimmed to remove vector quality sequence with phred score less than Seq primer: Stratagene SK primer.
Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 146;
                                                                                                                                                                                                                                        404 GTGACTGCAGCTCAATCTCAAGACCCTGAAGGGTGC 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.3%; Score 36.6; D
50.9%; Pred. No. 7.4;
[ve 0; Mismatches
                                                                                                                                                                                                    218 ccgactgcagcgccatccaaaggacccagaggatgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF292210
BF292210.1 GI:11223274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aegilops speltoides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similarity 50.9
87; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .329
```

ö

9

us-09-451-527-94.rst

```
1s 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                        RESULT
BE593226
                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                               LOCUS
                                      ò
                                                                             q
                                                                                                                    Qγ
                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission

L Submitted (10-JUN-1999) Genoscope - Centre National de Sequencage :
Submitted (10-JUN-1999) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE [E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr - Web : www.genoscope.cns.fr - General mation of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP).
The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutcyo Oscogawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial sogenic strain v2; cn bw sp, the same strain used for the BDGP's pl and EST libraries. A more detailed description of the library of filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.ubffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó:
                                                                                                                                                                                                                                                                                               CNSO091P 925 bp DNA GSS 03-JUN-1999
Drosophila melanogaster genome survey sequence TET3 end of BAC #
BACR19D16 of RPCI-98 library from Drosophila melanogaster (fruit
80 caaccetcaaggageteattgaggagetggteaacateacceagaateaggeatecetet 139
                                                                                                      923 BSCSCSCSCSSBSCSSSSMSTSSSNSSBSCSSSSSSSSSSSSSSSSSSSSSSSSS 864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               863 GTSSACVKCNASSEGCCGCGMABCCMCSSSSCCGSASARGVKVRASGGAGKRGGGSGG 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148 agcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctg 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88 aaggageteattgaggagetggteaacateaceeagaateaggeateettgeaaegge 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoā; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
I (bases I to 925)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28 geteteacctgceteggtggcettgcetececgagecetgtgactecetececaaccete 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 925;
                                                                                                                                                         others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative 139; Mismatches 121; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone_lib="RPCI-98"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 229;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 36.6; DE
Pred. No. 9.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172
                                                                                                                                                                                                                                                                                                                                                     fly), genomic survey sequence. AL053013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="BACR19D16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="end : TET3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                  AL053013.1 GI:4934461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                          fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                               CNS0091P/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                    g
                                                                                                                  g
                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
  ŏ
                                                                             ò
                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ο̈́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                               BE593226 277 bp mRNA EST 18-AUG-2000 WS1_99_B03.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence.
803 ASASHSSSSACBSSSSSCSASCWSASSSSSASSSRSRGGAGGGGASSSRSSSSSSSSS 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84 cctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccttctgcaa 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 cygcaycatgytytygaycytcaacctyaccyccyycatytactycycayctctayaatc 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rm. 2502, Athens, GA 30602-7271, USA
                                                                   208 atcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 CGACGCCGCCGAGTGGGTCAACGGCCAGGTCATCCGCGCCCAACGGCGGCTACGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 137; Length 277;
                                                                                                                                                         268 tctcaaaagcccgcggcagggcagatttccagtgaacgcagccgagacacc 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           An EST database from Sorghum: water-stressed plants Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 36.4;
Pred. No. 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence start: 5
High quality sequence stop: 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Botany
The University of Georgia
Plant Sciences Building, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        totgatcaatgtctccgactgc 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGATCTTTAGCTTCTACAGC 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                           BE593226.1 GI:9848299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.3%;
53.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                    sorghum.
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47
```

ö

```
The University of Georgia
Plant Sciences Building, F
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 204 tctgatcaatgtctccgactgc 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369 TCTGATCTTTAGCTTCTACAGC 390
                                                                                                                                                                                                                                                                                                         Email: mmpratt@uga.edu
                BE357229.1 GI:9298786
                                                                                                                                                                                                                                                                                                                                                                        Seq primer: PolyTMix
                                                             Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
BF039993
LOCUS
               VERSION
KEYWORDS
SOURCE
                                                                                                                             REFERENCE
                                                                                                                                              AUTHORS
                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                          TITLE
                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Сp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                   Bukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
1 (Dases I to 411)
Adams, M.D. 1 (Dases I to 411)
Adams, M.D., Rounsley, S.D., Zhao, S., Field, C.E., Bass, S., Linher, K., Golden, K., Berry, K., Granger, D., Suh, E., Wible, C., Shizuya, H., Simon, M. and Venter, J.C.
Use of a random BAC End Sequence Database for Sequence-Ready Map Building (1998)
Conpublished (1998)
Contact: Mark Adams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                   Clones are available from Research Genetics (info@resgen.com). BAC end search page:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE357229 537 bp mRNA EST 20-JUL-2000 DG1_147_B02.g1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://www.tigr.org/tdb/humgen/bac_end_search/bac_end_search.html
Seq primer: M13 Reverse
                                           AQ001086 411 bp DNA GSS 26-JUN-1998
CIT-HSP-2288N10.TR CIT-HSP Homo sapiens genomic clone 2288N10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89 aggagetcattgaggagetggtcaacatcacccagaatcaggcatecetetgcaaeggca 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCAGACTGGGGTCTGGGGCTGGGGCCCACATGGGGGTCCTGAAAGGGCAGGGCTG 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cell_type="Sperm"
/note="Vector: pBeloBAC11; Site_1: HindIII; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.3%; Score 36.4; DB 201; Length 411; 48.5%; Pred. No. 8.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                       MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                    Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
971: 301 838 0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="GDB:7150045"
/db_xref="taxon:9606"
/clone="2288N10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="CIT-HSP"
/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tcaatgtctccgactgcagcgccatc 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: mdadams@tigr.org
                                                                                        AQÓ01086
AQ001086.1 GI:3028525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 48.5 Matches 100; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "IIIDUIH"
                                                                                                                                                                                                                                                                                                                                                                                                     Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Class: BAC ends.
                                                                                                                                                         Homo sapiens
                                                                            sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
           RESULT 9
AQ001086/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
BE357229
                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                          ACCESSION
                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107
                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ογ
```

```
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoldeae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
Eukāryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria: Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
1 (bases 1 to 462)
Lewin, H.A., Soares, M.B., Rebeiz, M., Pardinas, J., Liu, L. and Larson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. 537
/Organism="Sorghum bicolor"
/Organism="Sorghum bicolor"
/Organism="Laxon:4558"
/Clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhoI: Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                               Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF039993 462 bp mRNA EST 10-OCT-2000 BP250023B10D12 Scares normalized bovine placenta Bos taurus cDNA clone BP250023B10D12 5', mRNA sequence. BF039993.1 GI:10757048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84 cctcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatccctctgcaa 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309 CGACGCCGCCGAGTGGGTCAACGGCCAGGTCATCCGCGCCAACGGCGGCTACGTGTGATG 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144 cggcagcatggtggtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc
                                                                                                                                                                                                                                                                                                                                            Rm. 2502, Athens, GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 537;
                                                                                                                                                                                          An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ch 9.3%; Score 36.4; DB 166;
1 Similarity 53.5%; Pred. No. 9.6;
76; Conservative 0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence start: 31
High quality sequence stop: 514
POLYA=No.
                                                                                                                                                                                                                   Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequences have been trimmed below Phred quality 16. The is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
```

```
1946 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .497
                                                                                                                                                              and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AW729623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
AW729623/C
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                         REFERENCE
                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                        Funding for cattle EST sequencing was provided by the USDA National Research Initiative, Animal Genome Resource Grant AG 99-3205-8534 to H. A. Lewin and J. E. Wonack. Base Calling/Quality Socres: PHRED from Washington University Genome Center. Vector Trimmi g: Cross_match from Washington University Genome Center PHRAP suite. This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               zebrafish.
Danio rerio
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /lab_host="DH10B"
/note="Organ: placenta; Vector: pT7T3Pac; Site_1: ECORI;
/note="Organ: placenta; Vector: pT7T3Pac; Site_1: ECORI;
/note="Organ: placenta; Vector: pr7T3Pac; Site_2: NotI; The CDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares,
M.B. (1996), Genome Research 6(9): 791-806. "
13 c 153 c 73 t 3 others
                                         Contact: Lewin, H. A. W. Keck Center for Comparative and Functional Genomics University of Illinois at Urbana-Champaign 340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana, IL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AI444326 497 bp mRNA EST 09-MAR-1999
fb47h12.yl Zebrafish WashU MPIMG EST Danio rerio cDNA 5', mRNA
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85 ctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaac 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113 CTGATGGAGTTCAGTGAGCACCTGGCCATCATCCTGGAGGACGACGGCCGCTCCGACATCAGC 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                173 TCCACCTGCGCCAACAACAACAACAACAACAAGGAGCTGCTGCCCATCGAGCTGGACACC 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         233 CTGGTGGGCAAGGGGCGCTTCGCCGAGNTCTACAAGGCCAAGCTGAAGCAGAACACGTCT 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       145 ggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             205 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="Soares normalized bovine placenta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 36; DB 143; Length 462;
Pred. No. 12;
0; Mismatches 111; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                      BACKWARD: ATTAACCCTCACTAAAG
Insert Length: 462 Std Error: 0.00
Plate: BP250023B10 row: D column: 12
Seq primer: AGCGGATAACAATTTCACACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     265 tgctctcaaaagcccgcggcagggcagatttcc 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 293 GAGCAGTTCGAGACCGTGGCCGTCAAGATCTTC 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Bos taurus"
/db_xref="taxon:9913"
/clone="BP250023810D12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 462.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: TAATACGACTCACTATAGGG
                                                                                                                                                                                                   Email: h-lewin@uiuc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:4309388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 47.9 Matches 102; Conservative
                    Unpublished (2000)
                                                                                                                                                       Tel: 217 333 5998
Fax: 217 244 5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .462
                                                                                                                                                                                                                                                                                                                                                             PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AI444326.1
                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110
                                                                                                                                    61801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A1444326/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
```

```
clark, M., Johnson, S.L., Lehrach, H., Lee, R., Li, F., Marra, M., Eddy, S., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptco, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schuck, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                           4444 Forest Dark Parkway, Box 8501, St. Louis, Mo 63108, USA
Tal: 314 286 1800
Email: 2brafish@watson.wustl.edu
cDNA Library Preparation: Matthew Clark. CDNA Library Arrayed by:
Matthew Clark. DNA Sequencing by: Washington University Genome
Sequencing Center Clone distribution: Genome Systems, St. Louis,
Missouri (web address: www.genomesystems.com) (email contact:
info@genomesystems.com) and Research Genetics, Huntsville, Alabama
(web address: www.resgen.com) (email contact:
info@genomesystems.com) and Research Genetics, Huntsville, Alabama
RessourcenZentrumPrimarbatenbank, Berlin, Germany (web address:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="26 somite embryos, adult livers, shield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244 cagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagtgaa 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             422 CAGAGGATGCTGAGAGGATTCAGCTTCGCGGAGCAGGGGGGAATGGAGAGGGCTGGATGG 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:7955"
/clone_lib="Zebrafish WashU MPIMG EST"
/sex="mixed"
Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47;
                                                                                                                                                                                                                                                Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.1%; Sco. 57.7%; Pred. No. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                            WashU Zebrafish EST Project 1998
Unpublished (1998)
Contact: Stephen L. Johnson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Danio rerio"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 473.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              www.rzpd.de)
Seg primer: T3 ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64; Conservative
```

σ

```
Query Match 9.1
Best Local Similarity 50.6
Matches 86; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42
                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
AV387571/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                       FEATURES
                      TITLE
                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                         Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
Malvales; Malvacea; Gossypium.
1 (bases 1 to 1946)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Triticum aestivum
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
                                                                                                                                                                               1 (bases 1 to 1946)
Wing, R.A., Frisch, D., Yu, Y., Main, D., Rambo, T., Simmons, J., Henry, D., Wood, T.C., Leslie, A. and Wilkins, T.A.
An integrated analysis of the genetics, development, and evolution of the cotton fiber
Unpublished (2000)
GA__Ea0025J07 Gossypium arboreum 7-10 dpa fiber library Gossypium
arboreum cDNA clone GA__Ea0025J07, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:29729"
/clone="GA_Ea00125J07"
/clone=lib="GA_E005xpium arboreum 7-10 dpa fiber library"
/tissue_type="Fibers isolated from bolls harvested 7-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE498968 230 bp mRNA EST 04-AUG-2000 WHE0969_G06_N11ZS Wheat pre-anthesis spike cDNA library Triticum aestivum cDNA clone WHE0969_G06_N11, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Han
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 ccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagtga 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183 gtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggac 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 230)
Anderson,O.D., Chao,S., Choi,D.W., Close,T.J., Fenton,R.D., Ha,P.S., Hsia,C.C., Kang,Y., Lazo,G.R., Miller,R., Rausch,C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7; Site_1: EcoRI; Site_2: XhoI" 472 t 75 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.1%; Score 35.8; DB 119; Length 1946; 52.8%; Pred. No. 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68;
                                                                                                                                                                                                                                                                                                                        Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
Tel: 864 656 7288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Gossypium arboreum"
                                                                                                                                                                                                                                                                                       Contact: Wing RA
Clemson University Genomics Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /ind_host="E. coli"
/note="Vector: pBK-CMV; 492 c 495 g 47
                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 1946.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTAGAGGGGACGAAGAGAGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         303 acgcagccgagacaccaaaattga 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cultivar="8400"
                                                                                                                                                                                                                                                                                                                                                                                              Email: rwing@clemson.edu
                                                     AW729623.1 GI:7627221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE498968.1 GI:9697585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /strain="AKA
                                                                                          Gossypium arboreum.
                                                                                                         Gossypium arboreum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .1946
                                                                                                                                                                                                                                                                                                                                                                               Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bread wheat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE498968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                        EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Source
                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                    JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            156
                                    ACCESSION
                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE498968
                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific
West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595577
Fax: 5105595818
Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="E. coli Solk"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/site_1: EcoRI; Site_2: XhoI; Plants were grown in the
greenhouse. Whole spike with awns trimmed, white, green
and yellow anther were collected and total RNA, and
poly(A) RNA were prepared, a cDNA library was made, and
the cDNA clones were in vivo excised to give pBluescript
phagemids in the TJ close lab (Choi, Close, Fenton) at
the University of California, Riverside. Plasmid DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chlamydomonas reinhardtii.
Chlamydomonas reinhardtii
Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      green
Seaton,C.L. and Tong,J.C. The structure and function of the wheat genomes - Pre-anthesis spike cDNA library Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AV387571 Chlamydomonas reinhardtii C9 Chlamydomonas reinhardtii cDN clone CM026e03_r, mRNA sequence.
AV387571 GI:6541787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 TCGCCATCTCTCTCCCCTTCGTCCAGAAGATCATCGCCGAGATTTTCGGGACCTACTTCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 caacceteaaggageteattgaggagetggteaacateaceeagaateaggeateeetet 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence have been trimmed to remove vector sequence and low quality sequence with phred score less than 20 Seq primer: Stratagene SK primer. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Triticum aestivum"
/cultivar="Chinese Spring"
/db_xxcf="taxon:4565"
/clone="WHE0969_G06_N11"
/clone="lib="Wheat pre-anthesis spike cDNA library"
/tissue_type="Spike before anthesis"
/dev_stage="Adult plant"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chlamydomonadaceae; Chlamydomonas.

1 (bases I to 537)

1 (bases I to 537)

A large scale structural analysis of cDNAs in a unicellular alga. Chlamydomonas reinhardfili. I. Generation of 3433 DNA Res. 6 (6), 369-373 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 35.6; DE
Pred. No. 13;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.18;
```

```
Contact: Yasukazu Nakamura
The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: ynakamu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
1. 537
/organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                        /strain="C9"
/da_xref="taxon:305s"
/clone="CM026603_r"
/clone_lib="Chlamydomonas reinhardtii C9"
/clone_lib="Chlamydomonas reinhardtii C9"
/clone_lib="Chlamydomonas reinhardtii Site_1: Site_2:
/note="Vector: pBluescriptII SK-; Site_1: BcoRI; Site_2:
XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47 gccttgcctccccgagccctgtgactcccccaaccctcaaggagctcattgaggagc 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167 acctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgca 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 377 AGATCGAGCGCCCGCCGCCGCCCCCGCGTCGAGGAGGCGCCCCACCGCCTAAAGCG 318
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               227 gegecatecaaaggaeeecagaggatgetgaaageaetgtgeteteaaaageeeg 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
.
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
9.1%; Score 35.6; DB 29; Length 537;
Best Local Similarity 47.0%; Pred. No. 16;
Matches 110; Conservative 0; Mismatches 124; Indels 0
                                                                                                                                                                                                                                                                                                             89 t
                                                                                                                                                                                                                                                                                                            166 g
                                                                                                                                                                                                                                                                                                            220 c
20152988
                                                                                                                                                                                                                                                                                                             62
                                                                                                                                       source
                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
MEDLINE
COMMENT
                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

Search completed: May 13, 2001, 11:40:15 Job time: 16490 sec

gb\_sts2:\* gb\_sts3:\*

gb\_sts1:'

em\_vi:\*

em\_pat:\* em\_ph:\*

\*: vo\_me

em\_sts:\* em\_pl:\*

em\_sy:\* em\_un:\*

gb\_un:\* gb\_vi1:\*

gb\_vi2:

\*: Ys\_dt

```
æ
                                                                              May 13, 2001, 14:20:33 ; Search time 9342.78 Seconds (without alignments) 525.651 Million cell updates/sec
                                                                                                                                      US-09-451-527-96
333
1 agccctgtgactccctcccc.....atcgccatggaaatttcaga 333
                                                                                                                                                                                                                                                                     2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                      1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                             IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_bal:*
em_ba2:*
em_bb2:*
em_fun:*
em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
em_htg_hum]:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_htg_hum3:*
em_htg_hum4:*
em_htg_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htg_inv2:*
em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _hume:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_hum8:*
em_htg_inv1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_hum7:*
                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_hum6:*
em_hum7:*
em_in:*
em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_hum3:*
em_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_ov:*
gb_pat1:*
gb_pat2:*
gb_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_pl1:*
gb_pl2:*
gb_pl3:*
gb_pl4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                              gb_ba1:*
gb_ba2:*
gb_ba3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_in2:*
gb_in3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_in1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gp_om:*
                                                                                                                                                                                                                                                                                                                                                                                                 GenEmbl:*
                                                                                                                                       Title:
Perfect score:
Sequence:
                                                                                                                                                                                               Scoring table:
```

Database :

Searched:

Run on:

gb\_htg23:\* gb\_htg24:\* gb\_htg25:\* gb\_htg19:\* gb\_htg20:\* gb\_htg21:\* 9b\_htg13:\*
9b\_htg14:\*
9b\_htg15:\*
9b\_htg15:\*
9b\_htg16:\*
9b\_htg17:\* gb\_htg10:\* gb\_htg11:\* gb\_ro1:\* gb\_ro2:\* gb\_htg22

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| Description                 | ) 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |        |       |       |       |       | A29930 Sequence co |       |       |       |
|-----------------------------|---|--------|-------|-------|-------|-------|--------------------|-------|-------|-------|
| 1 B                         | 7 A                                     | 9<br>8 | 10    | 93    |       | 10    | 9 A                | 10    | 88    | •     |
| Query<br>Match Length DB ID | 1302                                    | 336    | 336   | 1270  | 1282  | 1290  | 336                | 336   | 417   |       |
| Query<br>Match 1            | 100.0                                   | 61.1   | 61.1  | 61.1  | 61.1  | 61.1  | 9.09               | 9.09  | 9.09  | 0     |
| Score                       | 333                                     | 203.4  | 203.4 | 203.4 | 203.4 | 203.4 | 201.8              | 201.8 | 201.8 | 0 100 |
| Result<br>No.               | 1                                       | 7      | m     | 4     | S     | 9     | 7                  | 80    | 6     |       |

ö

```
Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                          SANOFI
                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Simi
Matches 259;
                                                                     Best Local Sim
Matches 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                          ELF
                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                  3'UTR
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                               352
                                                                                                                                                             121
                                                                                                                                                                                              181
                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                        RESULT
A29931
                                  ORIGIN
                                                                                                                                                                                                                                                                                                                          rocus
                                                                                                           qq
                                                                                                                            ò
                                                                                                                                           qq
                                                                                                                                                                           q
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                              g
                                                                                                                                                             ŏ
                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                 158495 Sequence 26
M33504 Mus musculu
134549 Sequence 3
126913 Rattus Norv
AF2690 Canis fam
142080 Homo sapien
13029 Human inter
10307 Human inter
031120 Human inter
AC004039 Homo sapi
AC074127 Homo sapi
AC074127 Homo sapi
                                                                                                                                                                                   L13028 Mouse inter
AC084392 Homo sapi
AC005742 Mus muscu
AC020886 Mus muscu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="interleukin-13"

/protein_id="AAF63204.1"

/db_xref="GI:528274"

/translation="MALMLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITONQA
                                                                                                                                                                                                                                                              Y18723 Mus musculu
AJ223310 Streptomy
U77894 Streptomyce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
          Sequence 17
                                                                                                                                                                            AC074127 Homo sapi
                                                                                                                                                                                                                                               AB025632 Arabidops
                                                                                                                                                                                                                                     AP000063 Aeropyrum
                                                                                                                                                                                                                                                      5206 Mus muscu
                                                  I86195 Sequence 1
AF072807 Bos tauru
                                                                                                                                                                                                                      AL359215 Streptomy
AL078618 Streptomy
 Nucleic aci
                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                               Streptomy
                  AR027065 Sequence
                                 A52326 Sequence 1
                                         AR027062 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                          Sequence
                                                                                                                                                                                                                                                                                                                                                  16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                               Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length
expression of biologically active recombinant protein
J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                                                                                                                                                                                                                                               AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. 1302
/organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                   HUMIL13B
HSU10307
HSU31120
AC004039
AC074127
HUM11DC98Z
                                                                                                           HUM1.1DC992
                             A52326
AR027062
I86195
AF072807
I58495
MUSSTCPE
I34549
                                                                                           RATIL13A
AF276990
                                                                                                                                                                                    MUSIL13A
AC084392
AC005742
AC020886
                                                                                                                                                                                                                                              AB025632
AB015206
MMU18723
SAAJ3310
                                                                                                                                                                    BTA132441
                 AR027065
I86198
                                                                                                                                                                                                                                     AP000063
                                                                                                                                                                                                                               SCD16A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                        AF244915.1 GI:7528273
996661
                                                          (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 (bases 1 to 1302)
                                                                                                                                                                                                                              39739
185300
51440
                                                                                                                 4600
4740
5670
50282
78469
3395
                                                                                                                                                                                    4376
142732
                                                                                                                                                                                                                                                      1091
1122
2437
2437
                                                                                           443
                                                                                                                                                                    3520
                                                                                                                                                                                                     159500
237823
                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris
                                                                                                                                                                                                                     38390
                                                                                                                                                                            78469
                                                                                                                                                                    221.0
17.5
115.5
114.8
114.8
112.3
                                                                         42.6
39.5
31.9
21.3
                                                                                                                                                                                                                                            11.0
10.9
10.9
10.9
 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20485146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang, S.
200.2
200.2
198.6
198.6
198.6
198.6
198.6
                                                                                                                                                                          558.4
449.4
449.4
40.8
37
                                                                                142
131.4
106.2
                                                                                                                                                          70.6
                                                                                                                                                                                                                                     36.8
36.8
36.4
4.9
4.4
4.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                RESULT
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FATURES
SOURCE
                                                                                                    ပပ
                                                                                                                                             000
```

```
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTORMLKALCSQKPAAGQISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
448. .130 c . 340 g 307 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           synthetic construct.

artificial sequence.

" (bases 1 to 336)

Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 3 30-SEP-1992;
                                                                                                                                                                                                                                            acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt 240
                                                                                                                                                                                                                                                                                                                                            291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
                                                                                                                                                  Gaps
                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                        1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                            atgtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                          292 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGGGGCAGGGCAGATTTCCAGT
                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                               Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A29931 336 bp DNA PAT 23.,
Sequence coding for the mature cytokine like protein.
A29931
                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 203.4; DB 9;
Pred. No. 7.5e-44;
); Mismatches 71;
                                                                                                                 Score 333; DB 7;
Pred. No. 2.2e-78;
                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="synthetic construct"
/db_xref="taxon:32630"
95 c 90 g 71 t
                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 333;
100.0%; Pred. No. 2.
live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61.1%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A29931.1 GI:1249019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synthetic construct.
                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
```

ï

de

```
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVXDLLLHLKKLFREGRFN"
                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1270)

McKenzie, A.N.J., Culpepper, J.A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., de Yries, J.E., Banchereau, J. and Zurawski, G.R.

Interleukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function

Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhin; Hominidae; Homo.
1 (bases 1 to 1282)
                                                  growth factor; interleukin 13; regulatory protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 gocotytyactcoctcoccaaccotcaayyagotcattyayyagotygtcaacatcacoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 203.4; DB 93; Length
Pred. No. 7e-44;
0; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      406 ATTTAAAGAAACTTTTTCGCGAGGGACGGTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="GI:186276"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H.sapiens interleukin-13 mRNA.
                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                336 g
                                                                             Homo sapiens cDNA to mRNA.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.18;
77.88;
                             GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X69079.1 GI:297787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             335 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ಡ
                                                     cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                              MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
ACCESSION
                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                    TITLE
                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSNC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The capers of the control of the con
                                                                                                  238
                                                                                                                                                    241
                                                                                                                                                                                                    gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-0CT-1997
gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                     ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca
                                                                                                                            242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggtttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 61.1%; Score 203.4; DB 10; Length 336; Best Local Similarity 77.8%; Pred. No. 7.5e-44; Matches 259; Conservative 0; Mismatches 71; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMILL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                      .5652123.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="unknown"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \OmegaS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 24 from patent
I58494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:2477732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158494.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                               179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                    239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                302
```

REFERENCE

KEYWORDS

SOURCE

VERSION

RESULT I58494

qq

g ò

ò

à Q AUTHORS

TITLE

JOURNAL

FEATURES

ORIGIN

셤 ò g ò g

1;

Gaps 61

3;

PRI

HUMIL13A

à q

ò g ò q

Length 1270;

```
.1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
JOURNAL
                                                                             118
                                                                                                                                                                                                                                                                                  238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                            ~
                                                                                                                               62
                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                      239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
I34548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                        q
                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                            ò
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
Minty, A.J.

Direct Submission

Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches,
Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE
2 (bases 1 to 1282)

Minty, A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C.,
Kaghad, M., Labit, C., Leplatois, P., Liauzun, P., Miloux, B., Minty, C.,
Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="SWISS-PROT:P35255"

/translation="MHPLIADILIDELLALLLTTVIALTCLGGFASPCPVPPSTALR

/translation="MHPLIADILIDELLALLTTVIALTCLGGFASPCPVPPSTALR

/translation="MHPLIADILIDEL"

/translation="MHPLIADILIDEL"

/translation="MHPLIADILIDEL"

/db_xref="MHPLIADILIDEL"

/db_xref="MHPLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MALLITVIALFCLGGFASPGPVPPSTALRELIEELVNITGNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                                                                                                                                                            Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                       /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
15, .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61.1%; Score 203.4; DB 92;
77.8%; Pred. No. 7e-44;
iive 0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HVRDTKIEVAQFVKDLLLHLKKLFREGRFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="alternative; ATG at 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="G1:673420"
/db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="NC30; alternative"
117. .452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="NC30; alternative"
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence-experimental
/protein_id="CAA48823.1"
/db_xref="G1:580330"
                                                                                                                                                                                                                                                                                                                                                        1. .1282
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                   and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1153. .1157
/note="ATTTA motif"
1264. .1260
                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="ATTTA motif"
873. .877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .134. .1138
'note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polyA_signal
BASE COUNT 2
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                       MEDLINE
  AUTHORS
                                                 JOURNAL
                                                                                                                               AUTHORS
                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                              TITLE
```

```
238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGGGGGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11111111 | 11111 | 1 | 11111 | 1 | 11111 | 1 | 1 | 1 | 11111 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                          agaatc---aggcatccctctgcaacggcagcatgtgtgtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .,
m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dang, W. and Zurawski, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 203.4; DB 10; Length
Pred. No. 7e-44;
0; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 1290)
Culpepper J, McKenzle, A., Dang, W.
Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134548 1290 bp DNA
Sequence 1 from patent US 5596072.
134548 1 GI:1825339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
335 c 336 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61.18;
77.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 61.1
Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      299
```

ï

1;

Gaps

'n

Indels

Best Local Similarity 77.8 Matches 259; Conservative

S

;;

Gaps

3;

61 61

241

301

DEFINITION

LOCUS

RESULT

Dp

ACCESSION VERSION KEYWORDS

ORGANISM

SOURCE

REFERENCE AUTHORS

```
/PCR_conditions="94C-lmin, 50C-lmin, 72C-3min, 30 cycles; DeltaCycler II from Ericomp"
4. .402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF043334 417 bp mRNA PRI 21-FEB-1998
Homo sapiens interleukin 13 precursor (IL13) mRNA, complete ¢ds.
AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Engineering, General Institute
Co., Ltd., 213 Sosa Bon 1-dong,
                                                                                                                                                                                                                                                                                                                            119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                               122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                               239 gigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacci 298
                                                                                                                                                                                                                                                                           62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGAGCATCAACCTGACCAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                        182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC
                                                                                                                                                                                         2 gecetgigacteceteceaaceeteaaggageteattgaggagetggteaacateaeee
                                                                                                                                                                                                                                                         62 agaatc---aggcatccctctgcaacggcatcgtggtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                              179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                        Length 336;
                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          forward primer (5'-ctcaatcctctctgttggca-3')
reverse primer (5'-tagtcaggtcctgtcttgc-3')
2) second PCR:
forward primer (5'-ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-gatgctttcgaagtttcagttgaa-3').
Location/Qualifiers
                                                                                                                        DB 10;
                                                                                                                      Score 201.8; DB 10;
Pred. No. 2e-43;
0; Mismatches 72;
                                                       ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                       71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (15-JAN-1998) Protein
Technology, Hyundai Pharm. Ind.
Sosa-gu, Bucheon 422-231, Korea
     Location/Qualifiers
                                      /organism="unknown"
                                                       б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF043334.1 GI:2905619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 417)
Jang, J.S. and Kim, B.E.
Direct Submission
                                                                                                                     60.6%;
ilarity 77.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1) first PCR
                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sosa-gu, Bu
                                                      81
                                                                                                                                                       Matches 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 primer_bind
                                                                                                                        Query Match
                                                                                                                                          Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                         δ
                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 2 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                       23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 agaatc---aggcatccctctgcaacggcagcatggtgggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 336;
                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 201.8; DB 9;
Pred. No. 2e-43;
0; Mismatches 72;
                                                                                                     mature cytokine
                                                                                                                                                                                                                                                                                                                                                                         /organism="synthetic construct"
406 ATTTAAAGAACTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                            7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
IS 5652123
                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:32630"
95 c 89 g
                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2 from patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60.68;
77.58;
                                                                                     336 bp
                                                                                                                                    A29930.1 GI:1249018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:2477719
                                                                                                     coding for
                                                                                                                                                                     synthetic construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 336)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 258; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158481.1
                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unknown
                                                                                   A29930
                                                                                                                     A29930
```

Query Match Best Local

g δ a ò qq ò g ò

source

FEATURES

JOURNAL

TITLE

BASE COUNT

ORIGIN

General Institute of

DEFINITION

RESULT 158481

rocus

VERSION KEYWORDS

182 239 242 299

qq

ò

ORGANISM

SOURCE

REFERENCE AUTHORS JOURNAL

TITLE

```
Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Simi
Matches 258;
                                                                                                                        Matches 258;
                                                                                                Query Match
                                                                                                              Sest Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                    358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                             239
                                                                                                                                                                                                                                                                                                                                                                                            299
                                                                                                                                                                                                                                                                                                                                                                                                                   418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
158488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                     g
                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                               ŏ
                                                                                                                                                                                             ò
                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                             /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTORMLGGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding for this protein, transformed cells and microorganisms Patent: EP 0506574-A 21 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                   118
                                                                                                                                                                                                                                                                                                                                                                   178
                                                                                                                                                                                                                                                                                                                                                                                                                   238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                               304
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                305 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 364
                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-JUN-1995 activity.
                                                                                                                                                                                                                                                                                                                                                                                185 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTGCAGGCTGCCATGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                              245 AGACCCAGAGGATGCTGGGGGGGATTCTGCCGCACAAGGTCTCAGCTGGGGAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                239 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                                    2 gecetgigacteceteceaaceteaaggageteattgaggagetggicaacateaeee
                                                                                                                                                                                                                                                                                                                  62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                   gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                artificial sequence.
1 (bases 1 to 1297)
Caput,D., Ferrara,P., Guillemot,J.C., Kaghad,M., Labit-le
                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
/product="protein with cytokine like activity"
                                                                                                                                                                                                                     Length 417;
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein with cytokine like
             precursor"
                                                                                                                                                                                                                    60.6%; Score 201.8; DB 88; 77.5%; Pred. No. 2e-43;
                                                                                                                                                                                                                                           72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           construct"
                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97
          /product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                   13
                                                                                                        64. .399
/gene="ILL3"
/product="interleukin 1:
complement(394. .417)
/note="second PCR"
a 121 c 108 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299 atgtaaggggagtttatcgccatggaaatttca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                       б
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                           /gene="IL13"
64. .399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A29948.1 GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             synthetic construct. synthetic construct
                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .1297
                                                                                    . 63
                                                                                                                                                                                                                                Similarity
                                                                                                                                                                       æ
                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A29948
Coding a
A29948
                                                                                    sig_peptide
                                                                                                          mat_peptide
                                                                                                                                              primer_bind
                                                                                                                                                                                                                                Best Local Sim
Matches 258;
                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                         Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
```

```
/protein_id="CAA01982.1"
/db_xref="GI:1249029"
/translation="MHPLIALGLMALLLTTVIALTCLGGFASPGPVPBSTALR
ELTERLVNITONOKAPLCNGSWWSINLTADMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGGFSSLHYRDTVIEWORVEVBLELHLKKLFREGRFN"
1 316 9 311 t
                                                                                                                                                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                    238
                                                                                                                                                                                                                                                                                   62 agaatc.--aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                  119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                   357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                   118 GCCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGGAGCTGGTCAACATCACCC 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-0CT-1997
                                                                                                                                                                                                                 2 gecetytyaeteceteceaaceeteaaggageteattyaggagetggteaaeateaeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                                                                                    ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1297;
                                                                                                                                                  Length 1297;
                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                  72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 201.8; DB 10;
Pred. No. 1.9e-43;
0; Mismatches 72;
                                                                                                                                                    DB 9;
                                                                                                                                                  Score 201.8; DB 9
Pred. No. 1.9e-43;
0; Mismatches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 15 from patent 158488
                                                                                                                                                    60.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.6%;
ilarity 77.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ö
                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unclassified.
                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                     æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 158488.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309
```

^

179

ò

qq ŏ g ô QQ

239 (

418

RESULT

A29950

LOCUS

```
1 (bases 1 to 425)
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic
microcorganisms in the presence of arginine
Patent: US 5856142-A 4 05-JAN-1999;
                                                                                                 1 (bases 1 to 384)
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                          PAT
                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                     Score 200.2; DB 1
Pred. No. 5.3e-43;
0; Mismatches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DΒ
                                                                                                                                                                                                                      u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 198.6;
                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66
              5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4 from patent US 5856142.
AR027065
                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                       /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                    Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="unknown"
  DNA
                                                                                                                                                                                                                    66
              Sequence 17 from patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59.68;
                                                                                                                                                                                                                                                                     60.1%;
ilarity 77.2%;
Conservative
                                       GI:2477727
                                                                                                                                                                                                                   104 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116 c
                                                                            Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified.
                                                                                                                                                                                                                                                                                 al Similarity
257; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ಹ
                                                                                                                                                                                                                      ø
                           I58489
I58489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                    97
                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown
 I58489
                                                                                                                                                                                                                                                                     Query Match
Best Local S:
Matches 257,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                              source
             DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           323
                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1.
AR027065
                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                 FEATURES
                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agaatc---aggcatccctctgcaacggcagcatggtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  238
                                                               gigaacgcagccgagacaccaaaaitgaagtgaiccagitggigaaaaaccigcicacci 298
                                                                                                                61
                                                                                                                                                                                                                                                                                                                        artificial sequence.

1 (bases 1 to 384).

Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms Patent: EP 0506574-A 23 30-SEP-1992;

ELF SANOFI
23 GCCTGTGCCTCCTCTACGGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 gocotgigactocotococaaccotoaaggagotoattgaggagotggicaacatoacoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        203 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                  ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 60.1%; Score 200.2; DB 9; Best Local Similarity 77.2%; Pred. No. 5.3e-43; Matches 257; Conservative 0; Mismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="synthetic construct"
/db_xref="taxon:32630"
104 c 99 g 84 t
                                                                                                                                                  299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                  Nucleic acid fragment B. A29950
                                                                                                                                                                                                                                                                                A29950.1 GI:1249030
                                                                                                                                                                                                                                                                                                         synthetic construct. synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
```

source

FEATURES

JOURNAL

TITLE

BASE COUNT

ORIGIN

62

g ò pp ò pp δy pp οy qq ò

238

29-SEP-1999

Length 425;

13

RESULT I58489

299 323

1;

Gaps

Indels

Length 384;

DEFINITION ACCESSION VERSION

ORGANISM

KEYWORDS

SOURCE

REFERENCE AUTHORS

82 61

for

```
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine patent: US 5700665.4 4 23.DEC-1997;
Location/Qualifiers
                                                                      178
                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGCCAGTTTTCCA 304
                                                                                                                                                                                                   239 gtgaacgcagacgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239 gigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacci 298
                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                    10-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          goootgtgactcccccaaccctcaaggagctcattgaggagctggtcaacatcaccc 61
                                                                                                                119 gcaigtacigcgcagcictagaaicicigaicaaigicicogacigcagcgccaiccaaa
                                                                                                                                                         3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10; Length 425;
76.9%; Pred. No. 1.4e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 198.6; DB 10; Length
Pred. No. 1.4e-42;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                            299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                                                              5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                                                                                                                             Sequence 4 from patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59.6%;
ilarity 76.9%;
Conservative
                                                                                                                                                                                                                                                                                                                    425 bp
                                                                                                                                                                                                                                                                                                                                                  GI:3205916
                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 425)
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match.
Best Local Similarity
Matches 256; Conserv
                                                                                                                                                                                                                                                                                                                                        I86198
186198.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                     Unknown
                                                                                                                                                                                                                                                                                                                    186198
                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                365
                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                               RESULT
186198
                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                       g
                                               QQ
                                                                        ò
                                                                                           qq
                                                                                                                                 g
                                                                                                                                                          δy
                                                                                                                                                                              a
                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  òγ
```

Search completed: May 13, 2001, 14:20:35 Job time: 19115 sec

us-09-451-527-96.rng

```
May 13, 2001, 14:29:54 ; Search time 472.02 Seconds (without alignments) 411.845 Million cell updates/sec
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                    - nucleic search, using sw model
                                                                                                    OM nucleic
```

Run on:

1 agccctgtgactccctcccc......atcgccatggaaatttcaga 333 678276 seqs, 291890651 residues IDENTITY\_NUC Gapop 10.0 , Gapext 1.0 US-09-451-527-96 333 Title: Perfect score: Sequence: Scoring table: Searched:

1356552 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

.DAT:\* .DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/NN1994.DAT:\*/cgnl\_8/gcgdata/geneseq/geneseqn/NN1995.DAT:\*/cgnl\_8/gcgdata/geneseq/geneseqn/NN1996.DAT:\* . DAT: \* DAT: \* DAT: \* DAT: \* /cgn1\_8/gcgdata/geneseq/geneseqn/NA2001.DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/NA1983.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1984.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1985.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1986.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1986.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1980.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1988.DAT:\*
/cgnl\_8/gcgdata/geneseq/geneseqn/NA1988.DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/nA1980.DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/nA1981.DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/nA1982.DAT:\* /cgnl\_8/gcgdata/geneseq/geneseqn/NA1998. /cgnl\_8/gcgdata/geneseq/geneseqn/NA1999. /cgnl\_8/gcgdata/geneseqn/NA2000. /cgn1\_8/gcgdata/geneseq/genesegn/NA1990. /cgn1\_8/gcgdata/geneseq/geneseqn/NA1991 /cgn1\_8/gcgdata/geneseq/geneseqn/NA1992 /cgn1\_8/gcgdata/geneseg/genesegn/NA1993 /cgn1\_8/gcgdata/geneseq/geneseqn/wA1997 N\_Geneseq\_0401:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

| SUMMARIES | Description           | Canine mature inte | Canine mature inte | Canine interleukin | Canine interleukin | Canine interleukin | Canine interleukin | Canine mature inte | Canine mature inte | Canine interleukin | Canine interleukin | Canine interleukin |
|-----------|-----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|           | Ü                     | Z55559             | 255560             | 255557             | Z55558             | 255555             | Z55556             | 255565             | Z55566             | 255563             | Z55564             | 255561             |
|           | OB                    | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 |
|           | Query Outch Length DB | 333                |                    |                    |                    |                    | •                  | 330                |                    |                    |                    |                    |
|           | %<br>Query<br>Match   | 100.0              | 100.0              | 100.0              | 100.0              | 100.0              | 100.0              | 95.2               | 95.2               | 95.2               | 95.2               | 95.2               |
|           | Score                 | 333                | 333                | 333                | 333                | 333                | 333                | 317                | 317                | 317                | 317                | 317                |
|           | Result<br>No.         | -                  | c 5                | e                  | c 4                | υ.                 | و<br>د             | 7                  | ထ<br>ပ             | 6                  | c 10               | 11                 |

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

P-PSDB; Y58222

Claim 11; Page 233-234; 264pp; English

| Canine interleukin<br>Canine interleukin<br>Canine interleukin<br>Gly41-Cytokine cod<br>Human low adenosin<br>Human adenosin | Human low adenosin<br>Human adenosine re<br>Sequence encoding<br>Human adenosin<br>Human adenosin | Human low adenosin<br>Human adenosine re<br>Asp41-Cytokine cod<br>Cytokine NC30. Q<br>Sequence encoding | Human low adenosin Human low adenosin Human adenosine re Canine interleukin Zea mays DNA fragm S. coelicolor Yesw | Human interleukin Dominant-negative Enhanced green flu Enhanced blue fluo Enhanced cyan fluo Enhanced cyan fluo | On .  |
|--|---|---|---|---|---|
| 255562<br>255553<br>255554<br>028944<br>F21334   | F21332<br>F21332<br>056692<br>F21333<br>A35211  | F21338<br>A35216<br>Q28943<br>Q28947<br>Q56693  | F21331<br>F21337<br>A35209<br>A35215<br>Z55552<br>C38383  | 232227<br>V48405<br>A93373<br>A93374<br>A93375  | 7 6 2 2 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |
| •  |   |   | 2211 P P E E E E E E E E E E E E E E E E E  |   |   |
| 1269<br>272<br>278<br>278<br>336<br>1270   | 99111   | 14978<br>14978<br>336<br>1297<br>1212   | 5670<br>5670<br>5670<br>5670<br>166<br>479  | 66<br>712<br>717<br>717<br>717  | 717<br>717<br>720<br>720<br>720             |
| 95.2<br>76.9<br>61.1<br>61.1   |   |   |   |   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,      |
| 317<br>256<br>218<br>203.4<br>203.4<br>203.4   | 203.4<br>203.4<br>203.4<br>203.4  | 203.4<br>203.4<br>201.8<br>201.8<br>142   | 7177<br>7173<br>344<br>344  | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   | 101010101                                   |
|  | 18<br>20<br>21<br>22  | 22223<br>2223<br>243  | 28<br>30<br>32<br>34  | ა გ. გ. გ. გ.<br>გ. გ. გ   | 144444<br>144444                            |

## ALIGNMENTS

Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss. Canine mature interleukin-13 (IL-13) clone 80 cDNA Wonderling RS Z55559 standard; cDNA; 333 BP Yang S, Dreitz MJ, 99WO-US11942. 98US-0087306 (first entry) WPI; 2000-072623/06. (HESK-) HESKA CORP. Canis familiaris. 28-MAY-1999; 14-MAR-2000 WO9961618-A2 29-MAY-1998; 02-DEC-1999 Sim G, 255559; RESULT Z55559  Wonderling RS;

(HESK-) HESKA CORP

99WO-US11942 98US-0087306

28-MAY-1999; 29-MAY-1998;

```
Sequences encoding canine interleuring 12.30 represent connected and 78 respectively. The invention relates to canine

11.4, canine or feline Fit-3 ligand, canine or feline CD40, canine or

12.4, canine or feline Fit-3 ligand, canine IL-13, feline

12.5, canine IL-3, canine IL-13, feline

13.6, canine IL-3, canine IL-13, feline

14.6, canine or feline or feline or feline connector or feline or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atglactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                       Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 333; DB 21; 100.0%; Pred. No. 1.4e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z55560 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity 100.
Matches 333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55560/c
ID Z55
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
Sequences encoding canine interleukin-13 (IL-13) closes 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CD154 (CD40 ligand), canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and mucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor in prophylactic regulation of an immune
colony-stimulation and prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans)
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333 AGCCCTGTGACTCCCTCCCCACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    273 CAGAATCAGGCATCCCTCTGCAACGGCAGCATGGTGTGGAGCGTCAACCTGACCGCCGGC 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   213 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGCGCCATCCAAAGG 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 agcoctgtgactcctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                            Z55552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 333; DB 21;
100.0%; Pred. No. 1.4e-90;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA
                                                                                                                                                                                                                                                                                   Claim li; Page 235; 264pp; English.
                                                                                                                      Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255557 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.
Best Local Similarity 100.
Matches 333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and in drug targetting
                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                                                                                   P-PSDB; Y58222.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255557
ΩX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

ö

BP

(first entry)

```
241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 300
                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                      Z55558 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sim
                                                                                                                                                                                                                                               Z55558/c
                                                                                                                                                                                                                                                                                                           qq
                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences 25552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-13, feline
IL-4, canine or feline Flt-3 ligand, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMSF), and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly acts, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                    antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
                                                                                                                                         tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 393;
                                                                          Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 100.0%; Score 333; DB 21; Best Local Similarity 100.0%; Pred. No. 1.5e-90; Matches 333; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                               Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 11; Page 232-233; 264pp; English.
                                                                                                                                                                                                                                                                                                        99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                               98US-0087306
                                 14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                  Interleukin-13; IL-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-072623/06.
P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                       immunoregulation;
                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                               Yang S,
                                                                                                                                                                                                                      WO9961618-A2.
                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                               29-MAY-1998;
                                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                               Sim G,
```

Wonderling RS;

Dreitz MJ,

Yang S,

o,

98US-0087306

```
Sequences 225552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine
IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-3, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allerghes, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
conclined in a second or service or service or sequences
can also be used for the recombinant production of a protein, while
conclined the inflammation and probes, as amplification primers and concerned the combinant probes, as amplification primers and concerned the concerned the combined the concerned the conc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 333; DB 21; 100.0%; Pred. No. 1.5e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
Claim 11; Page 233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.
Best Local Similarity 100.
Matches 333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug targetting
```

ö

121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180

acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggggagatttccagt 240

181

QQ

61

ò Dp ò

61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120 cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 120

1 agocotgigactocotococaaccotoaaggagotoattgaggagotggtcaacatoaco 

```
29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                  255556;
                                                                                                                                                                                                                                                                                                                                                                    ဖ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis
                                                                                                                                                                                                                                                                                                              352
                                                                                                                                                                                                 61
                                                                                                                                                                                                                172
                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                               232
                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                              292
                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
                                                                                                                                                                                                                                                                                                                                                                           Z22227c
                                                                                                                                                                                                                                                                                                                                                                    RESULT
qq
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                οy
                                                                                                                                                                                                               q
                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                             pp
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                          pp
                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feliume Flt-3 ligand, canine or feliume Flt-3 ligand, canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feliue granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these
                                                                   274
                                     120
                                                     214
                                                                                                                                  241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
       9
                                                                                                                    94
                                                                                                                                           93 GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT 34
                                                                                                                                                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
      153 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGGCAGGGCAGATTTCCAGT
                                      181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                   "Canine IL-13 clone
                                                                                                                                                                                                                                                                     Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Wonderling RS;
                                                                                                                                                                  gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                         Claim 11; Page 229-230; 264pp; English.
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
52..447
                                                                                                                                                                                                                       Z55555 standard; cDNA; 1302 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                98US-0087306
                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                   /product=
                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic acids encoding useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                            Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                  WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                      14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                 02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sim G,
                                                                                                                                                                                                                                      Z5555;
    À
                                                                                                                                                                 301
                                     61
                                                                                                                                                                                                                                                                                                                            Key
                                                                                                                                                                                                       RESULT
255555
ID 25
                                                                                                                                                                                                                               qq
                                                  qq
                                                                                 g
                                                                                                                 qq
                                                                                                                                                                                g
      ö
                                    ŏ
                                                                     à
                                                                                                 ολ
                                                                                                                                  ò
                                                                                                                                                q
                                                                                                                                                                ò
```

```
ö
immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisease oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     atgtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune respons
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggttttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                  Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 333; DB 21; 100.0%; Pred. No. 2.4e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= "Canine IL-13 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z55556 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100.
Matches 333; Conservative
                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
```

```
Canine mature interleukin-13 (IL-13) clone 78 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or felline Fit-3 ligand, canine IL-5, canine IL-13, felline
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony stimulating factor (GMCSF), and nuclectides which encode these
immunoregulatory proteins. The proteins, their associated
uccles, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nuclectide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides)
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 333; DB 21; Length 1302; 100.0%; Pred. No. 2.4e-90; ive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                        Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 11; Page 231-232; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.
Best Local Similarity 100.
Matches 333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and in drug targetting.
                                                                                                                                                               WPI; 2000-072623/06
(HESK-) HESKA CORP.
                                                                                                                                                                                                                    P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sedneuces
                                                                                    ე
                                                                                        Sim
```

```
Query Match
                                                                                                          qq
                                                                                                                                                              qq
                                                                                                                       ò
                                                                                                                                    g
                                                                                                                                                ò
                                                                                                                                                                           ò
1072
                                                                        240
                   gaacgcagccgagacaccaaaattgaagtgàtccagttggtgaaaaacctgctcacctat
                                                                                                          gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                         891 GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA 859
                                                                                                                                                                         255565 standard; cDNA; 330
                                                                                                                                                                                      Z55565;
                                                                                                   241
                                                                                                                            301
```

g

ŏ q ö g δ

ŏ

14-MAR-2000 (first entry)

DXXXI

RESULT 255565

ò q òγ

;

```
Sequences encoding canine interleuch 11-13 clones 80
and 78 respectively. The invention relates to canine
11-4, canine or feline Fit-1 ligand, canine or feline CD40, canine or
11-4, canine or feline Fit-1 ligand, canine or feline
11-13, feline
11-14, CD40 ligand), canine IL-5, canine IL-13, feline
11-15, feline
11-15, feline
11-15, feline
11-16, canine or feline or feline conine or
11-17, feline
11-18, feline
11-19, feline
11-19, feline
11-10, fe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 atgtactgogcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 317; DB 21
Pred. No. 9e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 11; Page 239-240; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95.2%;
99.1%;
                                                                                                                                                                                                                                                                                                                99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58224
                                                                                                                                                                                                          W09961618-A2
                                                                                                                                                                                                                                                                                                             28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim G,
ò
```

g ó

ò

121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg

181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggtttccagt

330 AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 271

cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 

61

ò

```
Sequences 25552-25560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
II-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMSF), and nucleotides which encode these
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
mnunoregulatory proteins. The prophlactic regulation of an immune
colony-stimulating factor (GMSF), and inhibitors may be used as
uncleic acids, specific antibodies and inhibitors may be used to
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
238 gaacgcagccagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 297
                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                           Canine mature interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                       Claim li; Page 241; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                                         6/c
255566 standard; cDNA; 330
                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                            W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-MAY-1998;
                                                                                                                                                                                                                                                                      14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim G,
                                                                                                                                                                                                                                255566;
                                                                                                                                                                       Z55566/
ID Z5
                                                                                                                                                                                                               q
                                                         ò
                                                                                          q
```

```
control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contro
                                                                                 241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autolmmune disease
GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
                                                                                                                                                                                                    gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                                                                                  Claim 11; Page 238-239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                        255563 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G,' Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; Y58223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-DEC-1999.
                                                                                                                                                                                                 301
                                                                                                                                        93
                                                                                                                                                                                                                                                          33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sim
                                                                                                                                                                                                                                                                                                                                                                          255563
                                                                              ò
                                                                                                                                     g
                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
```

Gaps

0; Indels

0; Mismatches

Best Local Similarity 99.1 Matches 330; Conservative

Query Match

95.2%; Score 317; DB 21; Length 330; 99.1%; Pred. No. 9e-86;

\_

```
ij
nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                   61 agecetgtgaetecetececaaceeteaaggageteattgaggagetggteaacateace 120
                                                                                                                                                                                                                               cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                        cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acids encoding immunoregulatory proteins from cats or dogs, for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                       agcoctgtgactcoctoccoaaccotcaaggagotcattgaggagotggtcaacatcacc
                                                                                                                                                                                                                                                                                   atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                           181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                            gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat
                                                                                                                                                  3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                     95.2%; Score 317; DB 21; Length 390; 99.1%; Pred. No. 9.6e-86; ive 0; Mismatches 0; Indels
                                                                             82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 11; Page 239; 264pp; English
                                                                              92 A; 117 C; 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z55564 standard; cDNA; 390 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                 Query Match
Best Local Similarity 99.15
Matches 330, Conservative
                                                       and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-072623/06.
P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris.
                                                                                Sequence 390 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nseful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z55564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G,
                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255564
82888888888
                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                  q
```

```
order to the invention relates to canhom to the contine of the invention relates to canhom to the invention relates to canhom to the invention relates to canhom to the contine or feline Flt-3 ligand, canine or feline CD164 (CD40 ligand), canine IL-5, canhom IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat auttoinmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (eg., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 cagaatcaggcatcctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24. gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210 ATGTACTGCGCAGCTCTAGAATCTCTGAATGTCTCCGACTGCAGCGCCATCCAAAGG 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330 AGCCTGTGACTCCCTCCCCCAACCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGCGGGA---GATTTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ښ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 317; DB 21; Length 390;
Pred. No. 9.6e-86;
0; Mismatches 0; Indels
             sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relate to action
Sequences Z5552-Z55560 and Z55561.-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33 GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 95.2%;
Best Local Similarity 99.1%;
Matches 330; Conservative C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z55561 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .449
                                                                                                                                                                                                                                                                                                                                                                                                          and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Z55561
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
```

ij

œ

```
Sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
1L-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline
content of the content of the content of the content of the content of the colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated
colony-stimulatory proteins. The prophlactic regulation of an immune response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagaatcaggcatccctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95.2%; Score 317; DB 21; Length 1269; 99.1%; Pred. No. 1.5e-85; Live 0; Mismatches 0; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                               Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1i; Page 235-236; 264pp; English
                                                                                                                        99WO-US11942.
                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                    98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06
                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; Y58223
WO9961618-A2
                                                                                                                                                                                    29-MAY-1998;
                                                                                                                        28-MAY-1999;
                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
```

à g ò g δ Db οχ qq ò Q δ Db

```
the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and to increase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequences 25552-25550 and 25550-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine Encoding canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1153 AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 agocotytygactcoctcccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                    immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                             Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                               /*tag= a
/product= "Canine IL-13 clone 78'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 317; DB 21;
Pred. No. 1.5e-85;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 237-238; 264pp; English.
                                                                                                                                                                                                                                                       Location/Qualifiers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
             255562 standard; cDNA; 1269 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95.2%;
ilarity 99.1%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
hes 330; Conserv
                                                                                                                                                                                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                    W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-MAY-1998;
                                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                     255562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loca
Matches
255562/c
                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
```

ï

ö

١

```
and in drug targetting.
                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
                                                                                                                                                                                                                                                                                                                               257
                                                                                                                                                           61
                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                              SXC
                                                                                                                                  g
                                                                                                                                                           ò
                                                                                                                                                                                   g
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                               g
                                                                                                             ò
                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coquences encoding canine interleukin-13 clones 80
and 78 respectively. The invention relates to canine
conding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
clu-4, canine or feline Fit-3 ligand, canine or feline CDD54 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
colony stimulating feature (CDFSP), and nucleotides and immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
response in animals (particularly cats, dogs, horses and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
974
                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggcagatttccagt
                                                                                                gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                               atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                         Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling RS;
                                                                                                                                                                                  gtaaggggagtttatcgccatggaaatttcaga 333
                                                                                                                                                                                               Claim 1i; Page 228; 264pp; English.
                                                                                                                                                                                                                                                                   Z55553 standard; cDNA; 272 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0087306.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HESK-) HESKA
                                                                                                                                                                                                                                                                                                                                                                                                                             WO9961618-A2
                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G,
                                                                                                                                                                                                                                                                                           25553
                                    121
                                                          1033
                                                                                                                                                                                                        856
                                                                                  181
                                                                                                         973
                                                                                                                                  241
                                                                                                                                                                                301
                                                                                                                                                                                                                                                       Z5553
                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                    g
                                                                                                   . do
                                                                                                                                                      Db
                                                                                                                                                                                Ω
                                                                                 ò
                                                                                                                               ò
```

```
240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequences encoding can be interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nuclecities which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
                                                                                                                                                                                                                             cagaatcaggcatccttctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                197 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttccagt 256
                                                                                                      Gaps
                                                                                                                                          1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from cats or dogs, autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                             acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggttccagt
                                                                                                    ö
                                                           Length 272;
                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunoregulatory proteins preventing e.g. tumors or
69 G; 48 T; 0 other;
                                                                                                    ö
                                                           Score 256; DB 21;
Pred. No. 1.6e-67;
                                            76.9%; Scor.
100.0%; Pred. No. 1.
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-1.3 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim li; Page 229; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP.
ن
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z55554 standard; cDNA; 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
Sequence 272 BP; 64 A; 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gaacgcagccgagaca 272
                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dreitz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding useful for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gaacgcagccgagaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                 Local Simi
nes 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999
                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255554;
```

```
ö
vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                   121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                        Kaghad M, Labit-le Bouteiller C;
                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1..336 /*tag= a /*toe= "encodes Gly at position 41 of cytokine"
                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                         Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin; chemotaxis; immunomodulation; inflammation; ss
                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                   Seguence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                         DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                              181 acccagaggatgctgaaagcactgtgctctcaaaagcc 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 acccagaggatgctgaaagcactgtgctctcaaaagcc 278
                                                                                                                                                                                                        65.5%; Score 218; DB 21, 100.0%; Pred. No. 4e-56; ive 0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gly41-Cytokine coding sequence Nal'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Guillemot J,
M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q28944 standard; DNA; 336
                                                                                                                                                                                                                                    Matches 218; Conservative
                                                                                                                                          and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leplatois P, Magazin
                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ferrara P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; R27347.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP506574-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   028944;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caput
                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           000000000000x8
                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions

```
1;
                             T lymphocytes were induced by phorbol-2-myristate-3-acetate (PMA) and phytohaemaglutinin (PHA). Poly (A)+ RNA was isolated from the cells and reverse transcribed to cDNA. The CDNA was subjected to hybridisation with polyA RNA from the monkey kidney cell line (COS3. DNA specific for peripheral blood mononuclear cells (PBMC) (i.e. which did not hybridise) was cloned in pSE1 to construct a DNA bank. The bank was screened with CDNA prepared from PBMC which had been stimulated with PMA (and opt. PHA) and with a mixture of coligonuclectides specific to other cytokines. One positive clone (i.e. which hybridised more strongly to cells induced with PHA and PMA, c.f. PMA alone, and did not hybridise to known cytokine two potential AFG initiation codons and four potential signal sequence cleavage sites. A second positive clone differed only in the identity of codon 41 which was GGC (GIY) in stead of GAC (ASP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 agaaccagaaggeteegetetgeaatggeageatggtatggageateaacetgaeagetg 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcatgtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcgaga 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 gecetigtgeeteeetetacageceteagggageteattgaggagetggteaacateace 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agacccagaggatgctgagcggattctgcccgcacaaggtctcagctgggcagttttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ë
                                                                                                                                                                                                                                                                                                                                                                                                                     DB 13; Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       71;
                                                                                                                                                                                                                                                                                                                                                             Sequence 336 BP; 80 A; 95 C; 90 G; 71 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                   Score 203.4; DB Pred. No. 1e-51; ); Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: May 13, 2001, 14:29:55 Job time: 18310 sec
                                                                                                                                                                                                                                                                                                                                                                                                    61.1%; Scur
77.8%; Pred
0; )
Claim 11; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 259;
                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302
 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩŊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
```

```
USA
 FILING DATE:
                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                 CITY: Was
                                                                                                                                                                          US-08-371-121-24
                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                      APPLICANT:
STREET:
OO
                                              May 13, 2001, 14:21:17; Search time 226.02 Seconds (without alignments). 257.246 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                        , Appli
, Appli
, Appli
                                                                                                                                                                                                                                                                                                                                                           Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                    , Appl
                                                                                                                                                                                                                                                                                                                                                                          Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                , Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                             Appli
                                                                                                                                                                                                                                                                                                                                      Sequence 24, Appl
                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                          Appl i
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appl
                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7, i
Sequence 11,
                                                                                                                                                                                                                                                                                                                                                           Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 13,
Sequence 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 40,
                                                                                                                                                                                                                                                                                                                                                                  Sequence 2,
Sequence 15
                                                                                                                                                                                                                                                                                                                                                                                Sequence 17
                                                                                                                                                                                                                                                                                                                         Description
                                                                           US-09-451-527-96
333
1 agccctgtgactccctcccc.....atcgccatggaaatttcaga
                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                    /cgnl_7/ptodata/1/ina/5A_COMB.seq:*
/cgnl_7/ptodata/1/ina/5B_COMB.seq:*
/cgnl_7/ptodata/1/ina/6A_COMB.seq:*
/cgnl_7/ptodata/1/ina/F0FUSS_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUSS_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUSS_COMB.seq:*
      GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                       US-08-371-121-15
US-08-371-121-17
US-08-906-957-4
US-08-906-957-4
US-08-906-957-1
US-08-371-121-26
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-128-450-27
US-09-094-359-3
US-09-094-359-7
US-09-172-063-11
US-09-172-063-13
                                                                                                                                             hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                    PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645-1
US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-532-390-40
US-08-717-294-40
US-09-094-359-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-172-063-27
US-09-172-063-29
US-09-085-305-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-062-102-2
                                                                                                                               302621 segs, 87301344 residues
                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                               Listing first 45 summaries
                                    nucleic search, using sw model
                                                                                                         IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                             Issued_Patents_NA:*
                                                                                                                                                                                        Maximum Match 100%
                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                 Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                 of
                                                                                                                                                           sed
                                                                                                                                                                                                                                                                                                                                            203.4
203.4
203.4
201.8
201.8
200.2
198.6
198.6
198.6
142
                                                                                                                                                                                                                                                                                                                                                                                                                                       score:
                                                                                                         Scoring table:
                                    •
                                                                                                                                             Total number
                                                                                                                                                          Minimum DB s
Maximum DB s
                                   nucleic
                                                                                           Sequence:
                                                                                                                                                                                                             Database
                                                                                                                               Searched:
                                                                             Title:
Perfect :
                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                          Result
                                                                                                                                                                                                                                                                                                                       .
9
                                   ĕ
```

```
App
                                                Appli
Appli
                                                                                                                             Appl
                                                                                                                                                        Appli
Appl
                                                                                                                                                                                                                      Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: RAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: LABISOIMED Cells and microorganisms.

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                      1, Ap
630,
5, Ap
9, Ap
                                Sequence Sequence Sequence
                                                                            Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                   Sequence 1
Sequence 6
Sequence 5
                                                                                                                                                                                      Sequence Sequence
                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/371,121
                           US-08-8118-252-1
US-08-8118-252-5
US-08-8118-252-3
US-08-8118-253-3
US-08-8118-253-7
US-09-331-581-14
US-08-978-182-2
US-09-205-681-2
US-08-914-848-21
US-08-914-848-21
US-08-952-853-21
US-08-914-848-21
US-08-914-848-21
US-08-916-953-95
US-09-094-359-5
US-09-094-359-5
                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                     FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 24, Application US/08371121 Patent No. 5652123 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 2000/-510,
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FR 91
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                          CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington, D.C.
```

```
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                  71;
                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                   Score 203.4; DB 1
Pred. No. 6.3e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                406 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE:
                                      US 07/933,416
                                                                                                                    DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION: APPLICANT:
                                                                                 NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX03
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-496
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 61.1%;
Best Local Similarity 77.8%;
Matches 259; Conservative (
                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 1290 base pairs
                                                  FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                    PRIOR APPLICATION DATA: APPLICATION NUMBER: (
                                                                                                                                                                                                                                                       double
                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                     MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                     45..443
                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                      TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                 ;
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US93-07645A-1
                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                    NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                239 gigaacgcagccgagacaccaaaattgaagigaiccagitggigaaaaaccigcicacci 298
                                                                                                                                                                                                                                                                                                                                 62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                 2 GCCCTGTGCCTCCTTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 gccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                    .,
α
                                                                                                                                                                                                  61.1%; Score 203.4; DB 1; Length 336; 77.8%; Pred. No. 3.8e-55;
                                                                                                                                                                                                                                  71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 94304-1104

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFFWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3: DNAX Research Institute
901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JMBER: US/08/012,543
01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08012543
Patent No. 5596072
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Banchereau, Jacques
                                 24:
                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              de Vries, Jan
Zurawski, Gerard
 (202) 672-5399
                                                              LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Heath, Andrew
TELEFAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
FILING DATE: 01-FE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Palo Alto
California
                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                              ; TOPOLOGY: 11:
; MOLECULE TYPE:
US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                              P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

```
62 agaatc---aggcatccttgcaacggcagcatggtgggagcgtcaacctgaccgccg 118
                                                                                                                                                                                   286 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 345
                              Gaps
                                                                           ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca
                                                          2 gecetgigacteceteceaaceeteaaggageteatigaggagetggicaacateaeee
                             э;
Length 1290;
```

ä

```
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                       g
                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                       Öλ
                                                                                                                                                                         ò
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                     . Ä
                                                                                                                                                                                                                                                                                                            62 agaatc---aggcatcctctgcaacggcagcatggtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                      178
                                                                                                                                                                                                                                                                                                                                                                                                                                                      226 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            286 AGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTTCCA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                        166 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                  gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggtcagatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                            Length 1290;
                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                        Score 203.4; DB 5;
Pred. No. 6.3e-55;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 19930818
PRIOR APPLICATION DATE: APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATE: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATE: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
SEDENTH: 1290 Dase pairs
          PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                          61.18;
77.88;
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                        Query Match. 61.1
Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                        linear
                                                                                                                                                      ;
TOPOLOGY:
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406
                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
```

```
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                  238
                                                                                                                                                                                                                                                                                                                                                                          286 AGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                           gtgaacgcagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                          62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                        226 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGGTGCCATCGAGA 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    346 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                             Gaps
                                                                                      2 gcctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                   179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggcagatttcca
  Length 1290;
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
Score 203.4; DB 5;
Pred. No. 6.3e-55;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             406 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAPUT, Daniel
FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 27-WAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
US-08-371-121-2
; Sequence 2, Application US/08371121
; Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOLEY & LARDNER
    61.1%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MINTY, Adrian
KAGHAD, Mourad
Query Match 61.1
Best Local Similarity 77.8
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 30-NOV-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: LABIT-LE APPLICANT: MAGAZIN, MITTLE OF INVENTION: FITTLE OF INVENTION: FITTLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
```

```
MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        дq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTFILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: Activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: Lansformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                2 GCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGAGCTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                                                          Length 336;
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                       Score 201.8; DB 1;
Pred. No. 1.2e-54;
0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3000 K Street, N.W., Suite 500
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: 904136
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 15, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOLEY & LARDNER
                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                       Query Match 60.6%;
Best Local Similarity 77.5%;
Matches 258; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington, D.C
                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 20007-5109
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: CAPUT,
                                                                                                                                                                                                                                    TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                      US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
62 agaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ښ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                             PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 60.6%; Score 201.8; DB 1; Best Local Similarity 77.5%; Pred. No. 2e-54; Matches 258; Conservative 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                       FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30 NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27 MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91
APPLICATION NUMBER: FR 91
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
BREDIENDRATE ON NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16781/383
                                                                                           APPLICATION NUMBER: US/08/371,12
COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 16
TELECHMUNICATION INFORMATION: (202) 672-5300
TELEPAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX: 904136
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
                                             SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: mat_peptide LOCATION: 117..452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; LOCATION:
US-08-371-121-15
```

```
periplasmic proteins of prokaryotic microorganisms in the presence of arginine
           119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                              143 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 202
                                                                                        179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca 238
                                                                                                                                                                              239 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                  263 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 GCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 gecetgigactecetececeaaceeteaaggageteatigaggagetggicaacateacee 61
                                                                                                                203 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGCGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ж
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                  299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                      323 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 625 Slaters Lane - Fourth Floor
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, RICHARG E
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4, Application US/08594469
Patent No. 5700665
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59.6%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: METITLE OF INVENTION: PERITITLE OF INVENTION: PRESIDENCES: 9 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virginia
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE:
US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                              US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE:
                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                          ò
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                      APPLICANT: MAGAZIN, Marilyn TITLE OF INVENTION: Protein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 agaatc---aggcatccctctgcaacggcagcatgtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23 GCCCTGTGCCCCCCCTCTACGCCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 goootgtgactcoctcoccaaccotcaaggagotcattgaggagotggtcaacatcacoc 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60.1%; Score 200.2; DB 1; 77.2%; Pred. No. 4.1e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                               LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: FOLEY & LAKUNEK
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
FILLING DAME: 30 NOV-1992
PRIOR APPLICATION NUMBER: 05 PCT/FR92/00280
FILLING DAME: 27 MARR-1992
PRIOR APPLICATION DATA: PCT/FR92/00280
FILLING DAME: 27 MARR-1992
PRIOR APPLICATION DATA: FR 91 00137
FILLING DAME: 08 JAN-1992
PRIOR APPLICATION DATA: FR 91 03904
FILLING DATE: 29 MARR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16781/383
                                                                                    CAPUT, Daniel
FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOLS, Pascal
MINTY, Adrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PC-DOS/MS-DOS
                        Sequence 17, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPALIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                              KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 384 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 77.2
Matches 257; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX: 904136
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                double
                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE:
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE
                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
-08-371-121-17
                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                            APPLICANT:
                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                              Patent No.
```

Ξ,

g à ï

```
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: SALONE, Machod for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                 62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                             gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacct 298
                                                                                 305 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 364
                       Gaps
                                                           goottgtgactocotcoccaaccotcaaggagotcattgaggagotggtcaacatcacco 61
                                                                                                                                                                                                                                                                                               ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcagatttcca
                                                                                                                                                                                                                                                                                                                 245 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCGGAGTTTTCCA
                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0, Version #1.25
 Pred. No. 1.4e-53;
); Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       365 ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Bacon & Thomas
625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: REF/LEGOUX TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTONEY/AGENT INFORMATION:
NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 1, Application US/08594469
; Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: DNA (genomic)
76.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 4410 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Rel.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Alexandria STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: "FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JS-08-594-469-1
                                                                                                                                                                         125
                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                   299
                                                                                                                                     ŏ
                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: LEGOUX. Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
                 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                   185 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 244
                                                                                                                                                                                                                                                       gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                           Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TIOPPY disk
COMPUTER: TIOP FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
APPLICATION NOMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59.6%; Score 198.6; DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 625 Staters Lane - Fourth Floor CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                 299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                     365 ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECHONE: (703) 683-0500
TELEPHONE: (703) 683-0500
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08906957 Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 425 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: SCORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 06
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT '9
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                     239
                                                                                             119
                 ŏ
                                                   g
                                                                                             ö
                                                                                                                               qq
                                                                                                                                                                         ò
                                                                                                                                                                                                           β
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                 g
```

1;

3;

Length 4410; Indels 61

```
APPLICANT: MAGAZIN, MATIJUTTURE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: Activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: Lransformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                               agaatc---aggcatcoctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                         gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggcagatttcca 238
                                                                                                                                                                                                                                                             gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 gecetgigaeteceteceaaceeteaaggageteatigaggagetggicaacateaeee
                                                                                                                                                                                                                                                                                                                                                                                                                           522 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                Score 198.6; DB 2;
Pred. No. 3.2e-53;
0; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 702 ATTTAAAGAAACTTTTTCGCGAGGGACGGTCA 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
US-08-371-121-26
; Sequence 26, Application US/08371121
"~+ant No. 5652123
                                                                       TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
US-08-906-957-1
                                                                                                                                                                  59.6%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                        LENGIH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                Query Match 59.6
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAPUT, Daniel
   SEQUENCE CHARACTERISTICS
                                                          single
                                     nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20007-5109
                                     TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                          119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttcca 238
                                                                                                                                                                                                                                                                                                                                                                                                                         239 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 298
                                                                                                                                                                                                  62 agaatc---aggcatccctctgcaacggcagcatggtgtgggggggtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                             2 goootigtgactcoctcoccaaccotcaaggagctcattgaggagctggtcaacatcaccc 61
                                                                                                                                                                                                                     .,
                                                        Length 4410;
                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for the extraction
                                                                     3.2e-53;
                                                                                        0; Mismatches
                                                      59.6%; Score 198.6; 76.9%; Pred. No. 3.26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Bacon & Thomas
STREET: 6.25 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299 atgtaaggggagtttatcgccatggaaatttca 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: REF/LEGOUX TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08906957
Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANY: SALOME, MARC
TITLE OF INVENTION: Method f.
TITLE OF INVENTION: periples
TITLE OF INVENTION: presence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (703)
                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE:
                                                                         Best Local Sim
Matches 256;
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-906-957-1
                                                      Query Match
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

```
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70..465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                             94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 AGATCTGTGTCTCTCTCTCTGACCCTTAAGGAGCTTATTGAGGAGCTGAGCAACATCACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 ACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC------CCCACTACGGTC 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352 TCCAGCCTCCCGGATACCAAAATCGAAGTAGCCCACTTTATAACAAAACTGCTCAGCTAC 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 142; DB 1;
Pred. No. 9.2e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   de Vries, Jan
Zurawski, Gerard
ENTION: Human Interleukin-13
PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/FF92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 gtaaggggagtttatcgccatggaaatttc 330
                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-012-543-3
; Sequence 3, Application US/08012543
; Patent No. 5596072
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Banchereau, Jacques
                                                                                                                                                                           NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42.6%;
67.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                 TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 26
SEQUENCE CHARACTERISTICS:
LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 67.0
Matches 221; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
NUMBÈR OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
cagaatcaggcatccctctgcaacggcagcatggtgtggagggtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcaggtttccagt 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       322 ACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC------CCCACTACGGTC 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202 CAAGACCAGACTCCCCTGTGCAACGGCAGGATGGTATGGAGTGTGGACCTGGCCGCTGGC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262 GGGTTCTGTGTAGCCCTGGATTCCCTGACCAACATCTCCAATTGCAATGCCATCTACAGG 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 agocotgigactocotococaaccotoaaggagotoatigaggagotggtoaacatoaco 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 142; DB 1; Length 12
Pred. No. 1.3e-35;
0; Mismatches 100; Indels
                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
PAPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 gtaaggggagtttatcgccatggaaatttc 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           433 ACAAAGCAACTGTTTCGCCACGGCCCCTTC 462
                                                                                                                                                                                                                                                                                                    FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
RESISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT .14
PCT-US93-07645A-3
; Sequence 3, Application PC/TUS9307645A
; GENERAL INFORMATION:
; APPLICANT:
                                                                                                                                                                                                         PC-DOS/MS-DOS
                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGIH: 1212 base pairs
901 California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 67.0
Matches 221; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic acid
                          CITY: Palo Alto
STATE: California
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cagaatcaggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 142; DB 5; Length 12
Pred. No. 1.3e-35;
0; Mismatches 100; Indels
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Human Interleukin-13
NOMBER OF SEQUENCES: 6
NOMPLER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 gtaaggggagtttatcgccatggaaatttc 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US93/07645 FILING DATE: 19930818
                                                              COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 07/933416 FILING DATE: 21-AUG-1992 INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS: LENGTH: 1212 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application PC/TUS9307645
GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Floppy disk
Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 67.0%;
Matches 221; Conservative
           NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TOPOLOGY:
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 322 ACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCC------CCCCACTACGGTC 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             373 TCCAGCCTCCCCGATACCAAAATCGAAGTAGCCCACTTTATAACAAAACTGCTCAGCTAC 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142 AGATCTGTGTCTCTCCCTCTGACCCTTAAGGAGCTTATTGAGGAGCTGAGCAACATCACA 201
                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            1 agcoctgtgactcoctcoccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                      .
6
                                                                                                                                                                                                                                                                                                                                               Length 1212;
                                                                                                                                                                                                                                                                                                                                          Score 142; DB 5; Length 12
Pred. No. 1.3e-35;
0; Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 gtaaggggagtttatcgccatggaaatttc 330
                FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/010977
FILING DATE: 29-JAN 1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 1-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           433 ACAAAGCAACTGTTTCGCCACGGCCCCTTC
US 08/012543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Search completed: May 13, 2001, 14:21:21
Job time: 17832 sec
                                                                                                                                                                                                                                                                                                                                               42.6%;
67.0%;
                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                            Query Match 42.6
Best Local Similarity 67.0
Matches 221; Conservative
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                               ; TOPOLOGY:
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

ï

Mon May 14 10:29:09 2001

em\_esthum10:\*
em\_esthum11:\*
em\_esthum12:\*
em\_esthum13:\*
em\_esthum14:\*

em\_esthum15:\*
em\_esthum16:\*
em\_esthum17:\*
em\_esthum19:\*
em\_esthum20:\*
em\_esthum20:\*
em\_esthum21:\*
em\_esthum23:\*
em\_esthum22:\*
em\_esthum22:\*

em\_esthum26:\*
em\_esthum27:\*
em\_esthum28:\*
em\_estin1:\*

em\_estin2:
em\_estin3:
em\_estin5:
em\_eston1:
em\_eston1:
em\_eston2:
em\_estov2:
em\_estov2:
em\_estpv1:
em\_estpv1:
em\_estpv1::
em\_estp12::

em\_estpl5: em\_estpl6: em\_estpl7:

em\_estpl4;

```
May 13, 2001, 11:40:15; Search time 5997.24 Seconds (without alignments) 485.077 Million cell updates/sec
                                                                                                                            US-09-451-527-96
333
1 agccctgtgaactccctcccc......atcgccatggaaatttcaga 333
                                                                                                                                                                                                                                                   19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                         9623517 seqs, 4368049070 residues
                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries
                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                                  IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum3:*
em_esthum4:*
em_esthum5:*
                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                   gb_est1:*
gb_est2:*
gb_est3:*
gb_est5:*
gb_est6:*
gb_est6:*
gb_est10:*
gb_est10:*
gb_est11:*
gb_est11:*
gb_est11:*
gb_est12:*
gb_est12:*
gb_est13:*
gb_est21:*
gb_est21:*
gb_est21:*
gb_est23:*
gb_est33:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_esthum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_esthum6:
em_esthum7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum8:
em_esthum9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_esthum2
                                                                                                                                                                                                                                                                                                                                                                         EST: *
                                                                                                                             Title:
Perfect score:
Sequence:
                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                         Searched:
                                                                            Run on:
```

em\_estrol3:\*
em\_estrol4:\*
em\_estrol5:\*
em\_estrol6:\*
em\_estrol7:\*
em\_estrol8:\*

em\_estp19:\*
em\_estp19:\*
em\_estp19:\*
em\_estro1:\*
em\_estro2:\*
em\_estro5:\*
em\_estro5:\*
em\_estro6:\*
em\_estro9:\*
em\_estro9:\*
em\_estro1:\*
em\_estro1:\*
em\_estro1:\*

em\_estro20:\*

gb\_est25:\*
gb\_est26:\*
gb\_est27:\*
gb\_est28:\*
gb\_est30:\*
gb\_est31:\*
gb\_est41:\*
gb\_est41:\*

gb\_est43: gb\_est44: gb\_est45: gb\_est46: gb\_est46:

```
117; gb_set48:*
118; gb_set48:*
118; gb_set48:*
120; gb_set51:*
121; gb_set51:*
122; gb_set51:*
123; gb_set51:*
124; gb_set51:*
125; gb_set51:*
126; gb_set51:*
127; gb_set61:*
128; gb_set61:*
129; gb_set61:*
120; gb_set61:*
120; gb_set61:*
120; gb_set61:*
120; gb_set61:*
120; gb_set61:
```

em\_gss\_pln1:\*
em\_gss\_pln2:\*
em\_gss\_pro:\*
em\_gss\_rod1:\* em\_gss\_rod3:\* em\_gss\_rod4:\* em\_gss\_rod5:\* em\_gss\_rod2:\* em\_gss\_vrt2:\* em\_gss\_vrt3:\* gb\_gss33:\* gb\_gss34:\* gb\_gss5:\* gb\_gss6:\* gb\_gss7:\* gb\_gss2:\* gb\_gss3:\* gb\_gss8:\* gb\_gss9:\* gb\_gss10:\* gb\_gss11:\* gb\_gss12: gb\_gss13: gb\_gss14: gb\_gss20: gb\_gss21: gb\_gss22: gb\_gss23: gb\_gss24: gb\_gss25: 9b\_9ss28:19b\_9ss29:19b\_9ss30:19b\_9ss31:19b\_9ss31:19b\_9ss31:19b\_9ss31:19b\_9ss32:19b\_9ss22:19b\_9ss gb\_gss1:\* gb\_gss17: gb\_gss18: 3b\_gss4:\* gb\_gss26: gb\_gss27: gp\_gss15 gb\_gss16 gb\_gss19 

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Description                   | AL180699 Tetraodon | BE593226 WS1_99_B0 | BE357229 DG1_147_B | BF039993 BP250023B | AI444326 fb47h12.y | AW729623 GAEa002 | AF034173 AF034173 | BF606532 273595 MA | BE705147 Sc02_08f0 | BE032541 131940 MA | BE032543 131942 MA | AI746678 ul06b05.y | AZ201624 SP_0053_A | BE363650 WS1_64_G1 | BE361027 DG1_69_A0 | BF037598 601461167 | BE127683 DEPA1432 | BE402120 CSB004F06 |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| OI 6                          | 230 CNS024F6       | .37 BE593226       | .66 BE357229       |                    | 20 AI444326        | .19 AW729623     | ۲                 | .50 BF606532       | .38 BE705147       | .61 BE032541       | .61 BE032543       | 4 AI746678         | 217 AZ201624       | .66 BE363650       | .66 BE361027       | .43 BF037598       | .63 BE127683      | .66 BE402120       |
| å<br>Query<br>Match Length DB | 11.1 1016 2        | 277                | 537                | 462                | 497                | 1946             | 2275              | 498                | 507                | 535                | 546                | 570                | 965                | 370                | 262                | 929                | 341               |                    |
| Score Ma                      | <br>               | 36.4               | 36.4               | 36                 | 35.8               | 35.8             | 35.6              | 35.4               | 34.4               | 34.2               | 34.2               | 34.2               | 34.2               | 34                 | 34                 | 34                 | 33.8              | 33.6               |
| Result<br>No.                 | 7                  | 7                  | ĸ                  | 4                  | ი<br>5             | و<br>د           | 7                 | 80                 | 6                  | 10                 | 11                 | 12                 | c 13               | 14                 | 15                 | 16                 | 17                | 18                 |

: COAG234DD03LP1~end : T7" 17 others

t D

sequence g

ð

m

```
/db_xref="taxon:99883"
/clone="234H06"
/clone_lib="G"
/note="Genoscope sequence a 312 c 280 g ll
                                                                                                                                                                                                                                                                                           369 GCGAGGAGACAAT 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum bicolor
                                                                                                                                                                                                                                                                   gaagtgatccagt
                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                     BE593226
                                                      224
                                                                                                                                                                                                                                                                                                                                                                                                                                           sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is 20.
                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                  265
                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                               BE593226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                    Q
                                                                                                                                                             δλ
                                                                                                                                                                                                                                     pp
                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                  ^{\circ}
                                                                                                                              BE228410 98AS2556
AI062250 GH01393.5
C97983 C97983 Rice
AI064071 GH04331.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetracoon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetracoon.
                                                                                          AL104269 Drosophil
BF143984 601791238
               BE414190 SCU007.C0
BE216356 HV_CED001
                                      AI909438 IL-BT208-
AA880435 vw89f07.r
                                                                AQ590273 HS_5399_A
AW318852 un08d12.y
                                                                                                                                                                                  AU092344 AU092344
BF312933 601896391
BF127554 601810203
                                                                                                                                                                                                                                                                                         AU129052 AU129052
AW862698 945006D06
AW927591 945006D06
                                                                                                                                                                                                                                                                                                                    AW927591 945006D06
BE388073 601283783
AU162975 AU162975
                                                                                                                                                                                                                          BF105186 601822333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Actinopterygii; Neopterygii; Teleostei; Euteleostei; Nooteleostei; Burypterygii; Ctenosquamata; Acanthomorpha; Euacanthomorpha; Burdanthopterygii; Acanthopterygii; Perconorpha; Tetraodontiformes; Tetraodontoidei; Tetraodontidae; Tetraodon.

1 (bases 1 to 1016)
Rosest-Crollius,H., Jaillon,O., Dasilva,C., Fizames,C., Fisher,C., Weissenbach,J., Billault,A., Quetler,F., Saurin,W., Bernot,A. and Charaterization and repeat analysis of the compact genome of the Unpublished
                                                                                                                                                                                                                                                                  AU064144 AU064144
W80370 zh50f02.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                        AA360834 EST70082
AA361196 EST70439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tetraodon nigroviridis
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CNS024F6 1016 bp DNA GSS 12-MAY-2000
Tetraodon nigroviridis genome survey sequence T7 end of clone
234H06 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Tetraodon nigroviridis"
                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                         BE216356
AI909438
                                                                                                                                BE228410
AI062250
                                                                                                                                                                                 AU092344
BF312933
BF127554
                                                                                                                                                                                                                                                                            W80370
AU129052
                                                                                                                                                                                                                                                                                                     AW862698
AW927591
                                                                AQ590273
AW318852
                                                                                                      CNS014KJ
BF143984
                                                                                                                                                                                                                          BF105186
                                                                                                                                                                                                                                                               AU064144
                                                                                                                                                                                                                                                                                                                                  BE388073
                                                                                                                                                                                                                                                                                                                                             AU162975
                                                                                                                                                                     AI064071
                                                                                                                                                                                                                                        AA360834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS; genome survey sequence.
Tetraodon nigroviridis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL180699
AL180699.1 GI:7818756
                                                                                                                                                          175
                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 1016)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 1016)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genoscope
                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
CNS024F6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
O
                                                                                                                                                                                                                                                                                                                                              ပ
```

```
/db_xref="taxon:458"
/db_xref="taxon:458"
/clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld; Vector: Lambda Zap; Site_l: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the Site_2: Ecotor lambda ZAP II. Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoollophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 277)
                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BES93226 277 bp mRNA EST 18-AUG-2000 WS1_99_B03.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence.
                                                                                                                                                                                                                                             309 GGCTCGGAGGCCCCGGCAGCAGCAGCAGATCCAGAAGCAGCAGCAGCAGCAGCATG 368
                                                                                                   145 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg 204
                                                                                                                                                         249 CCGACCCGGGTTCCGGACGGCTGCTCCTCCCAAACTCGGTACTGGATGGTGGCGGCGGCGC 308
                                                                                                                                                                                                             205 tgctctcaaaagcccgcggcagggcagattccagtgaacgcagccgagacaccaaaatt 264
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rm. 2502, Athens, GA 30602-7271,
                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 277;
  Length 1016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          An EST database from Sorghum: water-stressed plants
                                                   60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 137;
  Score 37; DB 230;
Pred. No. 3.6;
0; Mismatches 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .277 /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 36.4; D. Pred. No. 3.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence start: 5
High quality sequence stop: 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences have been trimmed
below Phred quality 16. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The University of Georgia
Plant Sciences Building, Rm
Tel: 706 542 1860
Fax: 706 542 1805
Email: mmpratt@uga.edu
11.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE593226.1 GI:9848299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.9%;
53.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seg primer: PolyTMix
  Query Match 11.1
Best Local Similarity 54.9
Matches 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
```

```
Tel: 217 333 5998
Fax: 217 244 5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                    Bovine ESTs
                                                                                                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                     61801, USA
                                                                                                                                                  BF039993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 102;
                                                                                                                                                                                     EST
                                                                                                                                                                                                      COW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                  DEFINITION
                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                 369
                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                  ACCESSION
                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                  RESULT
BF039993
                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pp
                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnodiophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 537)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_l: Xhol; Site_2: EcoR; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 160 c 176 g 112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                   BE357229 537 bp mRNA EST 20-JUL-2000
DG1_147_B02.91_A002 Dark Grown 1 (DG1) Sorghum bicolor CDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           309 CGACGCCCCGGTGGGTCAACGGCCAGGTCATCCGCCCCAACGCCGCTACGTGTGATG 368
                                                                                                   cggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 143
                                                                                                                                 CGACGCCGCCGAGTGGGTCAACGCCCAGGTCATCCGCGCCCAACGGCGGCGTACGTGATG 1.4.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249 CCCCATGGAGAGGCTCGGGGAGCCCGGCGACATCGCGCCGGTGGTCGGGTTCCTCTGCAC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 cggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 143
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                81
                                   cctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgcaa 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24 cetcaaaggagetcattgaggagetggtcaacatcacecagaatcaggcatceetetgcaa 83
                                                    GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'L.H.
An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 36.4; DB 166;
Pred. No. 4.5;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The University of Georgia
Plant Sciences Building, Rm. 2502, Athens,
Tel: 706 542 1860
Fax: 706 542 1805
 :99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Sorghum bicolor"
 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 31
High quality sequence stop: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                  144 tetgateaatgteteegaetge 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144 tetgateaatgteteegaetge 165
                                                                                                                                                                                               rerearcriagerreracage 163
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                  GI:9298786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10.9%;
53.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                  Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                  BE357229
BE357229.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLYA-NO.
                                                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                    sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
16;
                                                                                                                                                                                                                                                                                                                                                                     EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                  24
                                                                22
                                                                                                 84
                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
 Matches
                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                    RESULT
BE357229
                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                   ö
                                                           Dp
                                                                                                 ò
                                                                                                                                qq
                                                                                                                                                                  ò
                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Final: 1. Lewineuiuc.edu
Funding for cattle EST sequencing was provided by the USDA National
Research Initiative, Animal Genome Resource Grant AG 99-3205-8534
tto H. A. Lewin and J. E. Womack. Base Calling/Quality Scores: PHRED
from Washington University Genome Center. Vector Trimmi g:
Cross_match from Washington University Genome Center PHRAP suite.
This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 462)
Lewin, H.A., Soares, M.B., Rebeiz, M., Pardinas, J., Liu, L. and Larson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Organ: placenta; Vector: pT773Pac; Site_1: EcoRI; Site_2: NotI; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. " 3 others
                                                                                                                                                                                                                                                                              Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΙΓ
                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Bovinae; Bos.
                      BP250023B10D12 Soares normalized bovine placenta Bos taurus cDNA clone BP250023B10D12 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Lewin, H. A. W. M. Keck Center for Comparative and Functional Genomics University of Illinois at Urbana-Champaign 340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85 ggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       145 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg 204
   10-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25 ctcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatccetetgcaac 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           173 TCCACCTGCGCCAACAACATCAACCACACACGGAGCTGCTGCCCATCGAGCTGGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="Soares normalized bovine placenta"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        row: D column: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORWARD: TAATACCACTATAGGG
BACKWARD: ATTAACCCTACTAAA
Insert Length: 462 Stror: 0.00
Plate: BP250023B10 row: D column: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seg primer: AGCGGATAACAATTTCACACAGGA
High quality sequence stop: 462.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 36;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9913"
/clone="BP250023B10D12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                     BF039993.1 GI:10757048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10.8%;
462 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (2000)
```

ő

83

6

121

υ

167

KEYWORDS

VERSION

qq ò

TITLE

```
a
                                                                                                                                                                                                                                                                                                                                                                                                                                  AW729623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AW729623
  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                      RESULT 6
AW729623/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Danio rerio

Eukaryota; Metazoa: Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopteryqii; Neopteryqii; Teleostei; Euteleostei; Ostariophysi;
Cypriniformes: Cyprinidae; Rasborinae; Danio.

(Cypriniformes: Cyprinidae; Rasborinae; Danio.)

(Cypriniformes: Cyprinidae; Rasborinae; Danio.)

(Cypriniformes: Cyprinidae; Martin, J., Bockers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    In some cases multiple members of the same cluster were sequenced to assess clustering parameters or single clones were sequenced additional times to assess quality
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: zbrafish@watson.wustl.edu
cDNA Library Preparation: Matthew Clark. CDNA Library Arrayed by:
Matthew Clark. DNA Sequencing by: Washington University Genome
Sequencing Center Clone distribution: Genome Systems, St. Louis,
Missouri (web address: www.genomesystems.com) (email contact:
Info@genomesystems.com) and Research Genetics, Huntsville, Alabama
info@genomesystems.com) (email contact:
info@cross: www.resgen.com) (email contact:
web address: www.resgen.com) (email contact:
web address: www.resgen.com) RessourcenZentrumPrimarDatenbank, Berlin, Germany (web address:
233 CTGGTGGGCAAGGGGCGCTTCGCCGAGNTCTACAAGGCCAAGCTGAAGAGAACACGTCT 292
                                                                                                                                                                                                                        AI444326 497 bp mRNA EST 09-MAR-1999
fb47h12.yl Zebrafish WashU MPIMG EST Danio rerio cDNA 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'tissue_type="26 somite embryos, adult livers, shield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Stephen L. Johnson
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
Tel: 314 286 1800
Fax: 314 286 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:7955"
/clone_lib="Zebrafish WashU MPIMG EST"
/sex="mixed"
                                                                                          293 GAGCAGTTCGAGACCGTGGCCGTCAAGATCTTC 325
                                                                   205 tgctctcaaaagcccgcggcagggcagatttcc 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WashU Zebrafish EST Project 1998
Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Danio rerio"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 473.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          www.rzpd.de)
Seg primer: T3 ET from Amersham
                                                                                                                                                                                                                                                                                                                AI444326.1 GI:4309388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              control.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and Wilson, R
                                                                                                                                                                                                                                                                                                                                                            zebrafish
                                                                                                                                                                                                                                                                        sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                   AI44326/C
                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
```

FEATURES

```
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Malvaceae; Gossypium.

1 (bases 1 to 1946)
Wing,R.A., Frisch,D., Yu,Y., Main,D., Rambo,T., Simmons,J., Henry,D., Wood,T.C., Leslie,A. and Wilkins,T.A.

An integrated analysis of the genetics, development, and evolution of the cotton fiber
                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                               GA_Ea0025107 Gossypium arboreum 7-10 dpa fiber library Gossypium arboreum cDNA clone GA_Ea0025J07, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:29729"
/clone="GA_Ea00025J07"
/clone=lib="GGSSpyium arboreum 7-10 dpa fiber library"
/clone_lib="GGSSpyium arboreum 7-10"
/tissue_Lype="Fibers isolated from bolls harvested 7-10
                                                                                                    184 cagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggcaggtttccagtgaa 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123 gtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggac 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            276 GCACTGCGGACCTCTATTGTGTGTGTGTCTTCTCAGTATCGAGGCACTACACGCAC 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  183 ccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagtga 242
                                                      Gaps
                                                                                                                                                422 CAGAGGATGCTGAGAGGATTCAGCTTCGCGGAGCAGCGGGAATGGAGAGGCCTGGATGG 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216 ACATAGCTAAACCAAGGAACAGAGAGAGNTCTCGCACTCTCGTAGGCGCAGCGATAATGTGA 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                               16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1946;
                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
     Length 497;
                                                                                                                                                                                                                                  362 TTCAGACGTCCCGCCACTTTGAGCTGCTCCAGTGTGTGGAACCACGTC 312
                                                                                                                                                                                                   244 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctc 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :: pBK-CMV; Site_1: EcoRI; Si
495 g 472 t 75 others
                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68; Indels
                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 35.8; DB 119;
                                                   47;
     DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Gossypium arboreum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Wing RA
Clemson University Genomics Institute
  Score 35.8; DE
Pred. No. 6.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 9.5;
                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence stop: 1946.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /lab_host="E. coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 acgcagccgagacaccaaaattga 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /strain="AKA"
/cultivar="8400"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: rwing@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW729623.1 GI:7627221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.8%;
52.8%;
10.8%;
57.7%;
                                                                                                                                                                                                                                                                                                                                                                             1946 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            492 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gossypium arboreum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gossypium arboreum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2000)
                                                      64; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 52.8
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .1946
                            Best Local Similarity
```

9

```
Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 507)
Singh,J.A., Piche,C., Couroux,P., De Moors,A., Harris,L.J., Hattori
,J.I., Ouellet,T., Robert,L.S., Sprott,D. and Tinker,N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
 Bennett, G.A., Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Laegreid, W.W. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pcMV SPORT6; Site_1: XbaI: Site_2: XhoI: Library made from pooled tissue from marrow, alveolar macrophage, ovary, fetal semitendonosus muscle, and fetal longissimus muscle."
                                         Design and use of four pooled tissue normalized cDNA libraries for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE705147 507 bp mRNA EST 12-SEP-2000 SC02_08f05_A SC02_AAFC_ECRC_cold_stressed_winter_rye_seedlings Scale cercale cDNA clone Sc02_08f05, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85 ggcagcatggtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25 ctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccctctgcaac 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactg
                                                                                           Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO BOX 166, Clay Center, NE 68933-0166, USA
TEL: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.4; Di
Pred. No. 8.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205 tgctctcaaaagcccgcggcaggcagatttcc 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             342 GAGCAGTTCGAGACCGTGGCCGTCAAGATCTTC 374
                                                                                                                                                                                           Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 3BOV"
                                                                                                                                                                                                                                                                                                         BACKWARD: GTTTCCCAGTCACGACG
Plate: 61 row: H column: 2
Seq primer: ATTTAGGTGACATARG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                          EST discovery in cattle
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE705147.1 GI:10093412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Secale cereale
                                                                                                                                                                                                                                                                   PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Secale.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local
                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE705147
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidae; Bovidae; Bosines; Bos.

1 (bases 1 to 498)
Smith,T.P.L., Casas,E., Stone,R.T., Heaton,M.P., Grosse,W.M.,
                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF034173 2275 bp mRNA EST 30-MAR-1998 AF034173 Human mRNA (Tripodis and Ragoussis) Homo sapiens cDNA clone ntcon2 contig, mRNA sequence.
AF034173 GI:2707735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1473 AAAAAWWRYKRWKRRKGRRKRMTGMYKRMYRAMMMAMCAMMACWWYYWKMRGMKKCWKYR 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caaaattgaagtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcg 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138 agaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaa 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              198 agcactgtgctctcaaaagcccgcggcaggcaggcagattcccagtgaacgcagccgagacac 257
                                                                                                                                                                                                                                                                                                       Tripodis, N. and Ragoussis, J. Generation of transcription map in the region immediately centromeric to human MHC across the 6p21.2-6p21.3 chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="6p21.3"
/clone="ntcon2 contig"
/clone=lib="Human mRNA (Tripodis and Ragoussis)"
a 619 c 470 g 599 t 149 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14; Length 2275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273595 MARC 3BOV Bos taurus cDNA 5', mRNA sequence.
BF606532
BF606532.1 GI:11707339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Guys Hospital
7th floor, Guy's Tower, London SE1 9RT, UK
Email: nikos@nki.nl
                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Tripodis, Nikos
Division of Medical and Molecular Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 10.7%; Score 35.6; D
Best Local Similarity 13.3%; Pred. No. 11;
Matches 26; Conservative 93; Mismatches
                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
: :: | ||| ||
1653 WIMRKRGAGITITGGA 1668
                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318 ccatggaaatttcaga 333
                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                     ooundary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                  numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COV
                                                                                                                                                                                                               EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
BF606532
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                           AF034173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
```

ö

Gaps

; 0

Indels

Length 498;

ö

```
/organism="Sus scrofa"
                                  /db_xref="taxon:9823"
/clone_llb="MARC lPIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:9823'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          embryos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE032543.1 GI:8327552
                                                                                                                                                                                                                                        10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152 c
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and 30
                                                                                                                                                                                                                                                         l Similarity
66; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                121
                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
BE032543
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                        /dev_stage="seedling three-leaf stage"
/note="Vector: Bluescript SK+/XhoI-EcoRI; Site_1: Eco RI;
Site_2: xho I: Sampled three-leaf seedlings treated for
one week at 20C, 12 hrs light/day. Library made with
Stratagene UNIZAP XR Kit/(not packaged). CDNA is directly
ligated into SK+/XhoI-EcoRI, then electroporated into
1 TOP10 cells (Invitrogen)."
1 169 c 148 9 65 t 10 others
                                                                                                                                                             /organism="Secale cereale"
/cultivar="Puma (winter rye)"
/dLxref="taxon:4550"
/clone="Sc02_08f65"
/clone_1lb="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seedl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Casas, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
1 (bases 1 to 535)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E. Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W. and Keele, J.W.
Design and use of two pooled tissue normalized cDNA libraries for
                                Agriculture and Agri-food Canada 960 Carling Avenue, Bldg. 20, Ottawa, Ontario, KlA OC6, Canada Tel: (613) 759-1662 Fax: (613) 759-1701 Email: singhja@em.agr.ca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 actocotococaaccotocaaggagotocattgaggagotggtcaacatcacccagaatcag 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 138; Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       225 GCGTCCGCCGACTCCGCCGACCAGTGAAGAAGAAGATG 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 gcatccctctgcaacggcagcatggtgtggagcgtcaacctg 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4369
Contact: Singh,J.A.
Eastern Cereal and Oilseed Research Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 34.4; DB Pred. No. 17; 4; Mismatches
                                                                                                                                                                                                                                                                          /tissue_type="leaf, crown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE032541 535 bp mRNA
131940 MARC 1PIG Sus scrofa cDNA
BE032541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BACKWARD: GTTTCCCAGTCACGACG
Plate: 63 row: E column: 8
Seq primer: ATTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCR PRIMERS
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE032541.1 GI:8327550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10.3%;
55.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57; Conservative
                                                                                                                                          1. .507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                          115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pig.
Sus
                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE032541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
```

qq ò

ò

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.

1 (bases 1 to 546)
Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E., Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Reele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
Contact: Smith TPL
/tissue_type="pooled"
//tab_host="DH10B"
//note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled tissue from day 11, 13, 15, 20,
and 30 embryos."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pCMV SPORT6; Site_1: Xba1; Site_2: Xho1;
Library and prade from pooled tissue from day 11, 13, 15, 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       227 CCTGTGACCACCACGGTCTACGATGACAAGGGCAATGAGAAGAGCATCACCGTGGCCCAG 286
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 287 GATGAGGCCATCCGCCCCAACACCACGAGGGCCTGGCCAAACTGAAGCTGCCTT 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 aatcaggcatccctctgcaacggcagcatgtgtggagcgtcaacctgaccgccggcat 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                4 cctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccag
                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                             Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10.3%; Score 34.2; DB 161; Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE032543 546 bp mRNA EST 0º
131942 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BE032543
                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4366 Fax: 402 762 4390 Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                DB 161;
                                                                                                                                                                                                                                                                          Score 34.2; DE
Pred. No. 19;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="MARC 1PIG"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCAGTACCAG
Plate: 63 row: E column: 10
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Sus scrofa"
```

œ

ö

Gaps

ö

64;

ACCESSION

RESULT

qq ò

g

VERSION

KEYWORDS SOURCE

REFERENCE AUTHORS

```
/clone_lib="Strongylocentrotus purpuratus, purple sea
urchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC Clones in E-Coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 965)
Cameron,R.A., Mahairas,G., Rast,J.P., Martinez,P., Blondl,T.R.,
Swartzell,S., Wallace,J.C., Poustka,A.J., Livingston,B.T., Wray,G.A., Ettensohn,C.A., Lehrach,H., Britten,R.J. Davidson,E.H. and
                                                                                                                                                                                                                                                                                                                                                                                                                     AZ201624 965 bp DNA GSS 31-AUG-2000 SP_003_AZ_BL_2596E Strongylocentrotus purpuratus, purple sea urchin, sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=53 Col=24 Row=C, DNA sequence.
                                                                                                                                                                               61 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                               356 AGGCCAGTGGATCAGTACAGCAACCAGAACAACTTCGTGCACGACTGCGTCAATATCACC 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caacggcagcatggtgtggagcgtcaacctgaccgccatgtactgcgcagctctaga 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             757 ATCTTTGAAGGGCACCACAGGGGAACCCGTGGTCAACACCCGGTACCAGTACTCGCCACT 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21 aaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctg 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A sea urchin genome project: Sequence scan, virtual map, and additional resources
Proc. Natl. Acad. Sci. U. S. A. 97 (17), 9514-9518 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strongylocentrotus purpuratus
Bukaryota, Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinoidea; Eucchinoidea; Echinoacea; Echinoida;
Strongylocentrotidae; Strongylocentrotus.
                                                    1 agocotgigactocotococaacootoaaggagotoattgaggagotggicaacatoaco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Strongylocentrotus purpuratus"
/db_xref="taxon:7668"
/clone="Plate=53 Col=24 Row=C"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 34.2; DB
Pred. No. 23;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Cameron, RA, Davidson, EH,
       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Division of Biology 156-29
California Institute of Technology
Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strongylocentrotus purpuratus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: acameron@caltech.edu
Plate: 53 row: C column: 24
Seq primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence stop: 9
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AZ201624.1 GI:8396538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: (626) 395-8421
Fax: (626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178 c
                                                                                                                                                                                                                                                121 atgtactgcgcagctc 136
                                                                                                                                                                                                                                                                                          476 AAGAATGATGNAGCGC 491
     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
nes 72; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         304
  72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                            AZ201624/C
                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                               g
                                                                                                                                                 ò
                                                                                                                                                                                                a
                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: Kidney: Vector: pME18S-FL3; Site_1: DraIII
(CACTGTGT); Site_2: DraIII (CACCATGTG); 1st strand cDNA
was primed with an oligo(dT) primer
[ATGTGGCCTTTTTTTTTTTTTTTTTTTT]; double-stranded cDNA was
ligated to a DraIII adaptor [TGTTGGCCTACTGG], digested
and cloned into distinct braIII sites of the PME18S-FL3
vector (5' site CACTGTGTG, 3' site CACCATGTG). XhoI should
be used to isolate the cDNA insert. Size selection was
performed to exclude fragments A.1SAb. Library
constructed by Dr. Sumio Sugano (University of Tokyo
Institute of Medical Science). Custom primers for
sequencing: 5' end primer CTTCTGCTCTAAAAGCTGCG and 3' end
primer CGACCTGCAGCACAA." 8 others
                                                                                                                                                                                                                                                                                                                                        AI746678 570 bp mRNA EST 22-JUN-1999 ul06bD5.yl Sugano mouse kidney mkia Mus musculus cDNA clone LIMAGE:2065233 5' similar to gb:D00015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); gb:M13685 Mouse prion protein (MOUSE);, mRNA sequence.
                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases I to 570)

Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., The Washurol, R. and Wilson, Project 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                     227 CCTGTGACCACCACGGTCTACGATGACAAGGCCAATGAGAAGAGCATCACCGTGGCCCAG 286
                           Gaps
                                                                                                                                                                  64 aatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcat 122
                                                                           cctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccag 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Marra M/WashU-NCI Mouse EST Project 1999
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 24; Length 570;
                           53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="Sugano mouse kidney mkia"
/sex="female"
Pred. No. 19;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 34.2; I
Pred. No. 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence stop: 283.
Location/Qualifiers
1..570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
/clone="IMAGE:2065233"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: custom primer used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /lab_host="DH10B"
                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain="C57BL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AI746678.1 GI:5124942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10.3%;
52.9%;
55.5%;
                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Lýcal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MGI:994421
                                                                                                                                                                                                                                                                                                                                                                                                                                         AI746678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                               AI746678
LOCUS
```

FEATURES

ö

Gaps

ó

63; Indels

697

ORIGIN

DB 217; Length 965;

others

```
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropognomaes; Sorghum.

I (bases 1 to 562)
Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                      The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271,
Tel: 706 542 1860
Fax: 706 542 18805
                                                                                                                                 ,L.H.
An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                         quality sequence stop: 560
                                                                                                                                                                                                                                                                                                    Sequences have been trimmed
below Phred quality 16. The
is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search completed: May 13, 2001, 11:40:22 Job time: 16497 sec
                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                               Unpublished (2000)
Contact: Cordonnier-Pratt
Department of Botany
                                                                                                                                                                                                                                                                                              Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                      Seq primer: JEN REV
High quality sequend
                  Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                            POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Simi
Matches 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                TITLE
JOURNAL
                                                                                             REFERENCE
                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ag
                                                                                                                                                                                                                                                                       Sorghum bicolor
Eukaryota: Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
; Andropogoneae; Sorghum.
; (bases 1 to 370)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld: Vector: Lambda Zap; Site_l: XhoI: Water EcoRI: The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
is 20.
                                                                                                                                                                                                                                                                                                                                                                  Cordonnier-Pratt,M.-M., Gingle,A., Marsala,C., Sudman,M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        визбабаб 370 bp mRNA EST 20-JUL-2000 WS1_64_G10.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, BE363650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54 CCCTTCGGCGAGGTCAAGACGTCAAGACGCCGCTGGACCAGTCCACGCAGAAGCACCGC 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
Eax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13 ccetececeaacceteaaggageteattgaggagetggteaacateacceagaateaggea 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 tecetetgeaaeggeageatggtgtggagegteaacetgaeegeeggeatgtae 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 370;
                                                                                                                                                                                                                                                                                                                                                                                       ,L.H.
An EST database from Sorghum: water-stressed plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 34; DB 166; I
Pred. No. 20;
0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .370
/organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence start: 32 High quality sequence stop: 368 POLYA-Yes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          db_xref="taxon:4558"
                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                    BE363650.1 GI:9305207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.2%;
56.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64; Conservative
                 141 atctctgatcaatgt 155
                                                 637 AGTACCTCTCAGGGT 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                          sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  114
                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                          RESULT 1
BE363650
                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
BE361027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                 ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
```

ACCESSION

VERSION KEYWORDS

```
ö
/organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhoI; Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                            13 ccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggca 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                     73 tccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtac 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   231 recricescricercacerrecrisaseseses aceceses estrecarsea 284
                                                                                                                                                                                                                                                                     Length 562;
                                                                                                                                                                                                                                                                                                              50;
                                                                                                                                                                                                                                                             Score 34; DB 166;
Pred. No. 22;
); Mismatches 50;
                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                10.2%;
ilarity 56.1%;
Conservative
```

to exclude PolyA, vector and regions threshold for highest quality sequence

USA

Sednence:

Run on:

Searched:

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                       gb_htg14:'gb_htg15:'
                                                                                                                                                                                                                                                                                                                                                                               gb_htg16:
gb_htg17:
                                                                                                                                                                                                                                                                                                                                                                                                       gb_htg18:
gb_htg19:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match Length F
em_ov:*
em_pat:*
                                                                                                                      gb_sts2:
                                                                                                                                                                                                                                                                                                                                                                                                                             gb_htg20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_rol:*
gb_ro2:*
                                                                                                                                                                                                                                                       gb_htg6:
gb_htg7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_htg22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_htg23
                                   em_pl:*
                                                           em_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_htg21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98.6 1302
69.9 213343
28.2 213343
28.5 1270
28.5 1290
28.4 1297
18.6 417
17.1 1212
                                                                                                           gb_sts1:
                                                                                                                                                                                                                                                                               gb_htg8:
                                                                         em_sy:*
                                                                                  em_un:*
                                                                                              em_vi:*
                                                                                                                                                          *:un_qk
                                                                                                                                              *: {s_d6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 362
362
362
360.4
360.4
235.6
229.2
216.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1251
887
408.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.
                                                                                            (without alignments)
2003.155 Million cell updates/sec
                                                                                                                                                      May 13, 2001, 14:20:35; Search time 9342.78 Seconds
                                                                                                                                                                                                                                         2566470
        GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                           IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htgo_inv:*
em_htgo_rod:*
em_htg_huml:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_htg_inv2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htgo_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_hum3:*
em_htg_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_hum7:*
em_htg_hum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_inv1:*
                                                                                                                          US-09-451-527-99
1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htg_hum6:*
                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htg_rod:*
em_hum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_ov:*
gb_pat1:*
gb_pat2:*
gb_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_pll:*
gb_pl2:*
gb_pl3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_bal:*
em_ba2:*
em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_hume:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_hum7:
em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                gb_in2:*
gb_in3:*
gb_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_p14:*
                                                                                                                                                                                                                                                                                                                                                                gb_ba1:*
gb_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                        gb_ba3:*
gb_in1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_hum2:
                                                                                                                                                                                                                                                                                                                                                   GenEmbl:*
                                                                                                                              Title:
Perfect score:
                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                   Database :
```

AF244915 Canis fam AF276990 Canis fam AF276990 Canis fam L06801 Homo sapien X69079 H.sapiens i

AF276990 AF276990 HUMIL13A HSNC30 I34548

AF244915 Ωï

Description

SUMMARIES

A29948 Coding sequised 158488 Sequence 15 AF04334 Homo sapianal AJ13441 Bos tauru 134549 Sequence 3

A29948 I58488 AF043334 BTA132441 I34549

78 93 93 10 10 10 10

1;

```
q
                                                                                                                                   Q
                                                                                                                                                                 g
                                                                                                                                                                                                 C
                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                 ογ
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                               ōλ
                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                             ζĊ
                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                            ζ
                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                       ζ
                                                                                                                     δ
                                                                                                                                                    ò
                                                                                                                                                                                  οŽ
                                                                                                                                                                                                                 ζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                  A29931 Sequence co
158494 Sequence co
729930 Sequence co
158481 Sequence 2
158485 Sequence 2
158495 Sequence 2
142079 Homo sapien
ACO14127 Homo sapien
ACO14127 Homo sapi
12613 Rattus Norv
G06679 human inter
M10307 Human inter
L26013 Rattus Norv
G06679 human STS W
M10307 Human inter
L2080 Homo sapien
ACO14127 Homo sapien
ACO14127 Homo sapien
ACO1542 Wuss muscu
ACO20886 Mus muscu
ACO20886 Mus muscu
                                                                                                                                                                                                                                        A29938 Sequence co
I58482 Sequence 9
AL398857 T7 end of
AL136963 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
                                                                                                                                                                                                                                I58483 Sequence 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission Submission Submitted (13-MR-2000) Allergy and Immunology, Heska Corporation, 1613 Prospect Parkway, Fort Collins, CO 80525, USA Location/Qualifiers
musculu
      AF072807 Bos tauru
A29950 Nucleic aci
I58489 Sequence 17
AR027065 Sequence
                                                                                                                                                                                                                          429939 Sequence co
        7 Bos tauru
Nucleic aci
                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                              A52326 Sequence 1
AR027062 Sequence
                                                       R027062 Sequence
I86195 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                       186198 Sequence
                                                                                                                                                                                                                                                                                                                             16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                         Yano, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length expression of biologically active recombinant protein J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                                                                                                                                         429938
                                                                                                                                                                                                                                                                                                                     AF244915 1302 bp mRNA MAM Canis familiaris interleukin-13 mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="GI:7528274"
                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                       HUMIDC992
AC074127
AC084392
AC005742
AC020886
MUSILI3A
A29939
                                                                                            158481
158495
HUM11DC982
ACO04039
HUM1213B
HSU31120
ACO74127
RATIL13A
G06679
HSU10307
                                                                                                                                                                                                                                                         CNS06HDF
AL136963
      AF072807
A29950
I58489
AR027065
I86198
                                              A52326
AR027062
I86195
                                                                                                                                                                                                                                158483
                                                                             158494
                                                                                                                                                                                                                                                 158482
                                                                                      A29930
                                                                                                                                                                                                                                         A29938
                                                                                                                                                                                                                                                                                                                                                     GI:7528273
                                                                            106
                                                                                                                                                                                                                                10
9
              900
                                                              10
                                                                                             10
53
78
                                                                                                                                                                                                         94
94
                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 1302)
                                                                                                                                                                   4740
3714
78469
                                                                                                                                                                                         142732
159500
237823
                                                                                                                                                                                                                4376
102
102
96
96
1168
213045
                                      425
4410
4410
4410
336
336
                                                                                                           3395
50282
4600
5670
                                                                                                                                           78469
                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 51
                                                                                                                                                                                                                                                                                                                                                    AF244915.1
                                                                                                                                                                          0077704
00777087
                                                                                                                                                                                                                                                         ထထ
                                                                                                                                                                                                                                                                                                                                                                                                                                          20485146
                                                                                                                                                                                                                                                                                                                                                                                                                                                   11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yang, S.
                                                                                                                                                                                                                                                                                                                                                                   dog.
                                                                                                                                                          1993.4
1911.6
11911.6
11911.6
1187.4
1185.8
1185.8
1185.4
1169.2
                                                                                                                                                    163.
                                                                                                                                                                                                                                                                                                            AF244915
LOCUS
                                                                                                                                                                                                                                                                                                                                    DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                     SOURCE
υυ
                                                                                                                                            υ
                                                                                                                                                                            O
                                                                                                                                                                                          OΟ
                                                                                                                                                                                                                                                         υ
```

```
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSOKPAAGQISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                                                     125
                                                                                                                                                                  180
                                                                                                                                                                                                                 305
                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                362
                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                             482
                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                            542
                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                           602
                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                          662
                                                                                                                                                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                                                                                                                         722
                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    962
                                                                                                                                    TGGTTGACTGTGGTCATTGCTCTCACCTGCCTCGGTGGCCTTGCCTCCCCGAGCCCTGTG 120
                                                                       Gaps
                                                                                      65
                                                                                                   9
                                                                                     tggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccgagccctgtg
                                                                                                                                                                                                                                                                                                                                           ggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                         cgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctatgtaagggga
                                                                                                                                                                                                                                                                                       cagagcaaagtgcagcattacagtggaggcagatatgtgtgggagggggtcttgctgtgtac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGAGCAAAGTGCAGCATTACAGTGGAGGCAGATATGTGTGGGAGGGGGGTCTTGCTGTAC
                                                                                                                                                                                                                  gcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagagg
                                                                                                                                                                                                                                                 atgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagtgaacgcagc
                                                                                                                                                                                                                                                                                                               gtttatcgccatggaaatttcagatgaagcatgaaaacttagcatccttatctgtagacc
                                                                                                                                                                                                                                                                                                                                                                           <u>ب</u>
                                                      Length 1302;
                                                                       Indels
                                                                       0
                                                       7;
                                                       DB
                                                      Score 1251; DE
Pred. No. 0;
0; Mismatches
                        ىد
                        307
                        б
                        340
                                                                       ö
                                                      98.6%;
                 1302
                        O
                                                                       Conservative
                        318
                  448.
                                                               Similarity
                        ๙
                                                                      Matches 1264;
                                                       Query Match
Best Local
                 3'UTR
COUNT
                                                                                                                                                                                                                                                                                                                                                            181
                                                                                       φ
                                                                                                                     99
                                                                                                                                    61
                                                                                                                                                                  121
                                                                                                                                                                                                  181
                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                306
                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                            483
                                                                                                                                                                                                                                                                                                                                                                           543
                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                    126
                                                                                                                                                                                   186
                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                              423
                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                          603
                                                                                                                                                                                                                                                                                                                                                                                                                                         663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    903
                      BASE CO
ORIGIN
```

ò g õ qq ò QQ

δ q ŏ 셤

ò

```
Best Local Similarity
                                                     39568
                                                                                                                                                               69826
                                                                                                                                                                                                71105
                                                                                                                                                                                                                                                                       73133
                                                                                                                                                                                                                                                                                                                                            96588
                      36539
                                                                                         41165
                                                                                                                            56024
                                                                                                                                                                                                                                    72259
                                                                                                                                                                                                                                                                                                          88902
                                                                                                                                                                                                                                                                                                                                                                                 105543
                                                                                                                                                                                                                                                                                                                                                                                                                    108419
                                                                                                                                                                                                                                                                                                                                                                                                                                                       113669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    170051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60084 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases I to 213343) Dubchak, I., Brudno, M., Loots, G.G., Pachter, L., Mayor, C., Rubin, E.M. and Frazer, K.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (10-JUN-2000) Genome Sciences Department, Lawrence
Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, CA 94720,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *** SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Active conservation of noncoding sequences revealed by three-Way
                                                                                                                                                                                                                                                                     GGTTTAGAGAGTCCCTGGGAATAAGCACTGTGTGTAAAATTCTGCTACCTCACTGGGATC 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOTE: This is a 'working draft' sequence. It currently consists of 25 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.
                                 1143 gigitgigiccaggccggggcgggiggggggggggggggigitgicacigaaigigcicii
                                                                                                                                                                                                                                                                                                                       taaaatatgttatcaaagagttaataatatagaagagtagcctaaaaggctgcatttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Provided by the following the finished sequence as soon as it is available and the accession number will be preserved.

1 16269: contig of 16269 bp in length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris chromosome 4 clone RPCI-81 390C13, IN PROGRESS ***, 25 ordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of unknown length
contig of 4147 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 697 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1 to 213343)
Blankespoor, C.M., Dean, W.B. and Lewis, K.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               species comparisons
Genome Res. 10 (9), 1304-1306 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF276990.1 GI:9964079
HTG; HTGS_PHASE2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32391:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36538:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32392
                                                                                                                                                                                                                                                                                                                                                                                                1263 aaaaaaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                 1261 AAAAAA 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0442524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
AF276990/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                            1083
                                                                                                       1023
                                                                                                                                                                                                                                                                                      1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PUBMED
```

TITLE

TITLE

COMMENT

```
Db 112101 GATTTCCAGTGAACGCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCT 112042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db 111921 ACGTCACAAATTTCTTAGGG----GGGGGGGGAAAGAACCATTTCCTCAGCTGGGACT 111866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           344 gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacct 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  644 geccageogggtggeeeteeteegtetgeaetteateaaegetgaaggaaageaetgeat 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 524 acgtcacaaatttcttagggaggtgggggggggggagaaccatttcctcagctgggacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 213343;
                                                                                                         f unknown length
of 1279 bp in length
f unknown length
of 1154 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36 213343: contig of 10508 bp in length.
Location/Qualifiers
1. 213343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9 others
                                                                                                                                                                                                                                                                                f unknown length
g of 2876 bp in length
f unknown length
g of 5250 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of unknown length
contig of 26780 bp in length
app of unknown length
contig of 6005 bp in length
                                                                            unknown length
of 13802 bp in length
                                                                                                                                                                                              unknown length
of 15769 bp in length
                                                                                                                                                                                                                                                                                                                                        gap of unknown length contig of 2778 bp in length gap of unknown length contig of 31660 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                            contig of 15013 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                   of 14859 bp in length
                          unknown length
of 1597 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                gap of unknown length
contig of 6931 bp in length
gap of unknown length
                                                                                                                                                                                                                          unknown length
of 7686 bp in length
                                                                                                                                                                                                                                                      unknown length
of 8955 bp in length
                                                                                                                                                                              of 874 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69.9%; Score 887; DB 78;
99.0%; Pred. No. 9.1e-226;
iive 0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="RPCI-81 390C13"
42812 c 44046 g 663
                                                                                                                                                                                                                                                                                              contig of
gap of unk
                                                                                                                                                                                             gap of contig contig contig contig c
gap of
contig
                                                                   contig
gap of
                          gap of
contig
gap of
                                                                                                                                                       contig
                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                            contig
                                                                                               contig
                                                                                                                           contig
                                                                                                                                        gap of
                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                  gap of
                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /chromosome="4"
                                                                                                                                                                                                                                                                                                                                                                                   148106:
             39567:
                                                                  56023:
                                                                                                                                                                                                           88901:
                                                                                                                                                                                                                                       96587:
                                                                                                                                                                                                                                                                   105542:
                                                                                                                                                                                                                                                                                               108418:
                                                                                                                                                                                                                                                                                                                           113668:
                                                                                                                                                                                                                                                                                                                                                       116446:
                                                                                                                                                                                                                                                                                                                                                                                                               155037:
                                                                                                                                                                                                                                                                                                                                                                                                                                           170050:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196830:
                                                                                             69825:
                                                                                                                         71104:
                                                                                                                                                     72258:
                                                                                                                                                                                73132:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 904; Conservative
```

ä

have

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases I to 213343)
Dubchak,I., Brudno,M., Loots,G.G., Pachter,L., Mayor,C., Rubin,E.M. Active conservation of noncoding sequences revealed by three-Way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94720,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris chromosome 4 clone RPCI-81 390C13, *** SEQUENCING AF276990
                                                                                Db 111745 CCCATGACTGTCCCCTCCTCAGAGCAAAGTGCAGCATTACAGTGGAGGCAGATATGTGTG 111686
                                                                                                                                                                                         DD 111385 TGTATTTAAAGTTAAGAAATAAAAATATGTTATCAAAGAGTTAATAATATATAGAAGAGTT 111326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111265 GTCACTGAATGTGCTCTTTCACTGACTTTGTCAAACTGGAAGCCAGAATAAAGATGGTG 111206
                   Db 111805 GCCCAGCCGGGTGGCCCTCCTCCGTCTGCACTTCATCAACGCTGAGGGAAAGCACTGCAT 111746
                                                                                                                                                       1184 gtcactgaatgtgctctttcactgactttgtcaaactggaagccagaaataaagatggtg 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blankespoor, C.M., Dean, W.B. and Lewis, K.D. Direct Submission Submitted (10-JUN-2000) Genome Sciences Department, Lawrence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Berkeley National Laboratory, 1 Cyclotron Road, Berkeley, CA
                                                                                                                                                                                                                                                                                                                                                  D 111505 CTGCTACCTCACTGGGGATCCTGGGGCCGACACGGGGACAGGGGAAAGGGTCAGAGATGC
                                                                                                                       ctgctacctcactgggatcctgggggccgacacaggggacagggagaaagggtcagagatgc
                                                     cccatgactgtcccctcctcagagcaaagtgcagcattacagtggaggcagatatgtgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1064 tgtatttaaagttaagaaataaatatgttatcaaagagttaataatatagaagagta
* NOTE: This is a 'working draft' sequence. It currently consists of 25 contigs. Gaps between the contigs * are represented as runs of N. The order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 species comparisons
Genome Res. 10 (9), 1304-1306 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:9964079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 213343)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 111205 ACAAGAGACCTAA 111193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1244 acaagagaaaaa 1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF276990.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10984448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                                                                                       764
                                                                                                                                                                                                                                                                                                                                 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
                                                     704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
AF276990
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                       g
                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                     δ
                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

```
Ay 584 cagcetgcaccgcctgcctccatggagctgagcccagccacccctgccttggtgcatggg 643 bb 113667 ccGcrrGcAcGGcrrGcAcGAGGTCATGAGCCCACCCCCCCCCCCTCGCTCGTGCATGGG 113726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

1 16269: contig of 16269 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 78; Length 213343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                               f unknown length
g of 13802 bp in length
f unknown length
g of 1279 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                               of 15769 bp in length
f unknown length
of 7686 bp in length
unknown length
of 8955 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown length
g of 15013 bp in length
f unknown length
g of 26780 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
of 31660 bp in length
unknown length
                                                                                                                                                                                                                                                                                    of 14859 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                       unknown length
of 8344 bp in length
unknown length
                                                                                                                                                                                                                                               unknown length
of 1597 bp in length
                                                                                                                              of 4081 bp in length
                                                                                                                                                                                                                                                                                                                                                               1154 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 2876 bp in length
                                                                                                                                                         of 3000 bp in length
                                                                                                                                                                                                                                   3029 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 2778 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 6931 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6005 bp in length
                                                                                                                                                                                 of 697 bp in length
                                                                                                                                                                                                                                                                                                                                                                                        874 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                            length
                                                                                                                                                                                                                       unknown length
                                                                                                                                                                                                                                                                         unknown length
                                                                                                                                                                     unknown length
                                                                                                                                                                                                                                                                                                                                                                             unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of unknown length contig of 10508 bp in
                                                                                                                                                                                              unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32.2%; Score 408.4; DB 78; larity 97.4%; Pred. No. 6.3e-98; Conservative 0; Mismatches 11;

    .213343
    /organism="Canis familiaris"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="RPCI-81 390C13"
| 42812 c 44046 g 66392 t
                                                                                                                                                                                                                                                                                                                                                                                                      unknown
                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 5250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                 oĘ
                                                                                                                                                                                                                                                                                                                                                                                          ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:9615
                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                       gap of
contig
                                                                                                                                                                                                                                                                                                 gap of
contig
                                                                                                                                                                                                                                                                                                                                                   gap of contiq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
contig
                                                                                                                                                                                              gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                    gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
                                                                                                     24613: contig
                                                                                                                              28694: contig
                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                           contig
                                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                                      contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig
                                                                                         gap of
                                                                                                                    gap of
                                                                                                                                              gap of
                                                                                                                                                          contig
                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                         qap of
                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                              gap of
                                                                                                                                                                                                                                                                                                                                                                                        contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /chromosome="4"
                                                                                                                                                                                                                                                                                                                                                                                                                                       96587:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196830:
                                                                                                                                                        31694:
                                                                                                                                                                                 32391:
                                                                                                                                                                                                          36538:
                                                                                                                                                                                                                                   39567:
                                                                                                                                                                                                                                                           41164:
                                                                                                                                                                                                                                                                                    56023:
                                                                                                                                                                                                                                                                                                             69825:
                                                                                                                                                                                                                                                                                                                                      71104:
                                                                                                                                                                                                                                                                                                                                                               72258:
                                                                                                                                                                                                                                                                                                                                                                                        73132:
                                                                                                                                                                                                                                                                                                                                                                                                                88901:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105542:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108418:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113668:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116446:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      148106:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155037:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       170050:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202835:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  213343:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                        28695
                                                                                                                                                                                                                                                           39568
                                                                                                                                                                                                                                                                                                                                                              71105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96588
                                                                                                                              24614
                                                                                                                                                                                                                                                                                                             56024
                                                                                                                                                                                                                                                                                                                                                                                       72259
                                                                                                                                                                                                                                                                                                                                                                                                                73133
                                                                                                                                                                                                                                                                                                                                                                                                                                        88902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202836
                                                                                                     16270
                                                                                                                                                                                 31695
                                                                                                                                                                                                          32392
                                                                                                                                                                                                                                   36539
                                                                                                                                                                                                                                                                                    41165
                                                                                                                                                                                                                                                                                                                                      69826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   108419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       155038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                170051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60084 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Sin
Matches 415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
```

ö

```
203
                                                                                                                                                                                                                                                                                                                                                  611
                                                                                                                                                                                                                                                                                                                                                                                     670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1011
                                                                                                                                                                                                                                                                                                                                                                     609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1085
86
                                      146
                                                                                                                 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 772
               q
                                                       g
                                                                                                                                 qq
                                                                                                                                                                       qq
                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                     ò
                                                                           δ
                                                                                             g
                                                                                                               ŏ
                                                                                                                                                     ò
                                                                                                                                                                                          δ
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codoi_start=1
/product='interleukin 13"
/protein_id="AAA36107.1"
/db_xref="c1:16276"
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13;
                                                                                                                                                                                                                                                                                                                                                              Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1270)

McKenzie, A.N.J.; Culpepper, J.A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, M., Cocks, B.G., Menon, S., de Vries, J.E., Banchereau, J. and Zurawski, G.R.

Interleukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function

Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                    823
                                                                                                                 883
                                     763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-JUL-1993
                                                                                                                                                                                                                                                                                                                           cytokine; growth factor; interleukin 13; regulatory protein.
Homo sapiens cDNA to mRNA.
Homo sapiens
tattgtgtgttatttaaacaagtgtctttgtttgtgctggggacagggagtggcttggag
                                     cccatgactgtcccctcctcagagcaaagtgcagcattacagtggaggcagatatgtgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                          HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 362; DB 93; I
Pred. No. 8.4e-86;
0; Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HVRDTKIEVAQFVKDLLLHLKKLFREGRFN'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.5%;
66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                 Db 114087 rGCrGr 114092
                                                                                                                                                                                                                                 tgctct 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 777:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polyA_site
COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
                                    704
                                                      Db 113787
                                                                                                                824
                                                                                                                                 113907
                                                                                                                                                                       113967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14
                                                                                                                                                    884
                                                                                                                                                                                                                                 1004
                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
                                                                                                                                                                                                                                                                                        HUMIL13A
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE CO
ORIGIN
                                                                                                                               q
                                                                                                                                                                     a
                                   άý
                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
á
                                                                                                               òγ
                                                                                                                                                ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
```

```
1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                            202
                                                                                         193
                                                                                                                       262
                                                                                                                                                      253
                                                                                                                                                                                    322
                                                                                                                                                                                                                 313
                                                                                                                                                                                                                                               379
                                                                                                                                                                                                                                                                            373
                                                                                                                                                                                                                                                                                                                                          433
                                                                                                                                                                                                                                                                                                                                                                         498
                                                                                                                                                                                                                                                                                                                                                                                                       489
                                                                                                                                                                                                                                                                                                                                                                                                                                    553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        964
380 agigaiccagiiggigaaaaaccigcicacciatgiaaggggagiitaicgccaiggaaa
                                                                                                                                                                                                                                                                                                                                                                                       499 agttccagattcatttttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                               254 GATCAACGTGTCAGGCTGCAGTGCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTG
                                                                                                                                                                                                                                                                 374 GGTGGCCCAGTTTGTAAAGGACCTGCTCTTACATTTAAAGAAACTTTTTGCGAGGGACG
                                                                                                                                                                                                                                                                                                                                                                         440 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                    785 CACTICACACACAGGCAACTGGGCAGCAGCAGCACACTTCTTCTTGGTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctct
                                                                                                                         cagcatggtgtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                               323 ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----AGCCGACCTCCAGCCTTCCCCTTGCCCAGGGCTCAGCCTGGTGGGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----gcttggagctgggggccagtgactcgggtttaga------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGCTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1025 CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGGGGGGCAGAACAGCCGCTCCT
                                                            ggageteattgaggagetggteaacateaceagaate---aggeatectgeaaegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ------tcttgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
```

13;

g

```
polyA_signal
                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                                                                                                                                                     146
                                                                                                                                                                                                                                                                                                                                                                                                                                                 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           621
                                                                                                                                          BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                            Direct Submission
Submitted (O2.NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches,
Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE
(bases 1 to 1282)
Minty, A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C.,
Kaghad, M., Labit, C., Leplatcis, P., Liauzun, P., Miloux, B., Minty, C.,
Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P., and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITONQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MALLITTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="alternative; ATG at 15 is an alternative start
                                                                                              17-FEB-1997
                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
                                                                                               PRI
---ATATTAAATATGTTAGCAAAGAGTTAATA 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="NC30; alternative"
15. 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=experimental
/protein_id="CAA48823.1"
/db_xref="G1:580330"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="G1:673420"
                                                                                                                                                                                                                                                                                                                                                                                                and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             evidence=experimental
                                                                                 mswc3U 1282 bp mRNA
H.sapiens interleukin-13 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="NC30"
/replace="a"
                                                                                                                                        X69079.1 GI:297787
                                                                                                                                                                                      Homo sapiens
                                                                                                                                                           lymphokine
                                                                                                                                                                                                                                              Minty, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           variation
                 1145 AA
                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                              4SNC30
                                                              RESULT
```

```
262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86 teteacetgeeteggtggeettgeeteceegageeetgtgaeteeeteceaaceteaa 145
                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                                                                             265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       856
                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                             85
                                                                                                                                                                                                                                                             26 CCTCAATCCTCTCCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC 85
                                                                                                                                                                                                                                             26 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206 CAGCATGGTATGGAGCATCAACCTGACAGGTGGCATGTACTGTGCAGCCCTGGAATCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacacccaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agttccagattcattttttttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                                                                                                                                                                                                                           ggageteattgaggagetggteaacateaceeagaate---aggeatectgeaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                   cagcatggtgtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             611 ctgagcccagccaccctgccttggtgcatggggcccagccgggtggcctcctccgtc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  440 tttcagatgaagcatgaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                  Indels 111;
                                                                                                                                                                                   Length 1282;
                                                                                                                                                                                   Score 362; DB 92;
Pred. No. 8.5e-86;
0; Mismatches 290;
                                                                                                                              311
                                                                                                 motif"
                                                                      motif"
                                                                                                                              ρ
                                                                                                                             337
                                                      1134. 1138
/note="ATTTA m
1153. 1157
/note="ATTTA m
1264. 1269
856. .860
/note="ATTTA n
873. .877
/note="ATTTA n
                                                                                                                                                                                   28.5%;
66.0%;
                                                                                                               4. .1269
341 c
                                                                                                                                                                                                               Matches 777; Conservative
                                                                                                                                                                                                   Similarity
                                                                                                                              Ø
 misc_feature
                             misc_feature
                                                         misc_feature
                                                                                     misc_feature
```

| Oy 380 agtgatccagttggtgaaaacctgctcacctagtaaggggagtttatcgccatggaaa 439 | 0y         726 agcaaagtgcagcattacagtggaggcagatatgtgtgggaggggg 771           111 | Oy 962 cctggggccgacacaggggacaggagaaaggtcagagatgctgctct 1010  | RESULT 7 A29948 LOCUS LOCUS LOCUS LOCUS ACCESSION A29948 LOCUS ACCESSION A29948 VERSION A29948 VERSION A29948.1 GI:1249028 KEYWORDS SOURCE SYNTHetic construct ORGANISM SYNTHetic construct ATHIGIAL sequence. REFERENCE 1 (bases 1 to 1297) AUTHORS BOUTEILLE,, Leplatois, P., Magazin, M. and Minty, A. TITLE Procein having cytokin type activity, recombinant DNA coding for this protein, transformed cells and microorganisms |
|---|---|--|---|
| Oy 819 tttattattgtgtgttatttaaacaagtgtcttgtttgtgtgtg                   | 134548  | Query Match         28.5%; Score 362; DB 10; Length 1290;           Best Local Similarity 66.0%; Pred. No. 8.5e-86;           Matches 777; Conservative 0; Mismatches 290; Indels 111; Gaps 13;           Qy 26 corportectegategatetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagetetegagagetegagetegagetegagetegagetegagetegagetegagetegagetegagetegagetegagetegagetegaget | Oy 146 ggagctcattgaggagctggtcaacatcaccagaatcaggcatccctctgcaacgg 202   |

œ

Mon

```
Query Match
                                                                                                                                                                                                                                                                                                        RESULT 8
158488
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                                          977
                                                                                                                                                                                               1037
                                                                                                                                                                                                                  1011
                                                                                                                                                                                                                                     1097
                                                                                                                                                                                                                                                        1071
                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
  737
                      772
                                        197
                                                            819
                                                                              857
                                                                                                 876
                                                                                                                   917
                                                                                                                                       911
                                                                                                                                                                             962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146
                                                                                                                                                                                                                                                                            1157
                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        203
                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE
                                      дq
                                                                                                                                                                                                                                                                        q
                     δλ
                                                                            QΩ
                                                                                                                 Ω
                                                                                                                                      δ
                                                                                                                                                        qq
                                                                                                                                                                                            Op
                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                         QΥ
                                                                                                Qγ
                                                                                                                                                                            δy
                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                 /codoi_start=1
/transl_table=11
/product="protein with cytokine like activity"
/product="protein with cytokine like activity"
/protein_id="can01982.1"
/db_xref="C1:1249029"
/db_xref="C1:1249029"
/translation="MHPLLNPLALELMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIBELVNITQNGKAPLCNGSMVWSINLTADMYCAALESLINVSGCSAIEKTORMLSG
FCPHKVSAGGPFSSHYRDTKIEVAGFVKDLLLHIKKLFREGRFN"
316 g 311 t
                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                    145
                                                                                                                                                                                                                                                                                                                                                                                                                                                             145
                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                           205
                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                 265
                                                                                                                                                                                                                                                                                                                                                                                   322
                                                                                                                                                                                                                                                                                                                                                                                                      325
                                                                                                                                                                                                                                                                                                                                                                                                                         379
                                                                                                                                                                                                                                                                                                                                                                                                                                           385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 771
                                                                                                                                                                                                                                             85
                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                                                                                                                     26 CCTCAATCCTCTCCTGTTGGCACTGGGCCTCATGGCGCTTTTGTTGACCACGGTCATTGC
                                                                                                                                                                                                                                                                 cagcatggtgtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                       ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                          326 CCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   562 TTAGGGAGGGGTAAAATTCCTTAGCTTAGACCTCAGCCTGTGCTGCCCGTCTTCAGCCT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGCTCAGCCTGGTGGCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --cagatatgtgggaggggg---
                                                                                                                                                                                                                                                                                                        ggagctcattgaggagctggtcaacatcacccagaatc---aggcatcctgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agttccagattcattttctttccgacgtcacaaatttcttagggaggtgggggg....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgagcccagccacccttgcttggtgcatggggcccagccgggtggcctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                                                                                                                         111;
                                                                                                                                                                                    28.4%; Score 360.4; DB 9; Length 1297;
65.9%; Pred. No. 2.3e-85;
Live 0; Mismatches 291; Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            =
=
=
                                       construct"
Patent: EP 0506574-A 21 30-SEP-1992,
                        1. .1297
/organism="synthetic cor/db_xref="taxon:32630"
15. .455
                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agcaaagtgcagcattacagtggagg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                               Similarity
           SANOF
                                                                                                                                               309
                                                                                                                                                                                                       116;
                                                                                                                                                                                      Query Match
                                                                                                                                                                                                Local
                              source
                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                                                                                            203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    611
                                                                                                                                                                                                                                                                                                        146
                                                                                                                                                                                                                                                                                                                                                               206
                                                                                                                                                                                                                                                                                                                                                                                                                        323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               554
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 726
                    FEATURES
                                                          CDS
                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                  pp
                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
```

```
13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                1070
                                                                                                                                                                                                                                                                                                             cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt 1010
                                                                                                                                       916
                                                                                                                                                                         910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-0CT-1997
                                                 tttattattgtgtgttatttaaacaagtgtctttgttgtgctgggggacagggagtg---
AGCACACTGTAGCATTACAGTGGGTGCCCCCTTGCCAGACATGTGGTGGGACAGGGACC
                                                                                                                                                                                                                                         -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                            TTTATTATTGTGTGTTTTTAAATGAGTGTTTGTCACCGTTGGGGATTGGGGAAGACT
                                                                                                                                                                                           GTGGCTGCTGGCACCTAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                    CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGAGGGGCAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
                                                                                                                                                                                                                                                                                                                                                                                                cetegetectectgeattggetetgggetecatggegetetggttgaetgtggteattge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg
                                 ---tcttgctgtacctggggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGCTCATTGAGGAGCTGGTCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 1297)
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1297;
                                                                                                                                                                         ------gettggagetgggggeccagtgaetcgggtttaga-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 360.4; DB 10;
Pred. No. 2.3e-85;
0; Mismatches 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  aaagttaagaaataaaaatatgttatcaaaagagttaata 1108
|}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ||
| AA-----ATATTAAATATGTTAGCAAAGAGTTAATA 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1297 bp
from patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 65.9
Matches 776; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1
I58488
I58488.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        I58488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
```

```
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                             610
                                                                                                                                                                                                                                                   ctgagcccagccaccctgccttggtgcatggggcccagccgggtggcctcctccgtc- 669
                                                                                                                                                                                                                                                                                            725
                                                                                                                                                                                                                                                                                                                                                                                                                                    916
                                                                                                                                                                                                                                                                                                                                                                                                                                                         910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            916
                             325
                                                379
                                                                    385
                                                                                        439
                                                                                                           445
                                                                                                                              498
                                                                                                                                                  501
                                                                                                                                                                      553
                                                                                                                                                                                          561
                                                                                                                                                                                                                                                                                                                                   771
                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                              856
                                                                                                                                                                                                                                                                                                                                                                                                                  875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                  ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaattga
                                                           agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                             GITCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTGA
                                                                                                                                                                     agttccagattcatttttctttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                              TAGGGAGGGTAAAATTCCTTAGCTTAGACCTCAGCCTGTGCTGCCGCCTTCAGCCT-
                                                                                                                                                                                                                                                                                                              CACTTCACACACAGGCAACTGAGGCAGACAGCCAGGCACACTTCTTGTTGGTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                 tttattattgtgtgttatttaaaacaagtgtctttgttgtgtgctggggacagggagtg---
                                                                                                                                                                                                                                                                                                                                                                                                                           -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACCCCAGGAGTACCTAATAAGTACTGTACAGAATTCTGCTACCTCACTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTGGGGCCTCGGAGCCTCATCCGAGGTCAGGAGGGGGAGAACAGCGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1097 GTCTGCCAGCCAGCCAGCTCTCAGCCAAGTAATTTATTGTTTTTCCTCGTATTTT
          gateaatgteteegaetgeagegeeateeaaaggaeeeagaaggatgetgaaageaetgtg
                                                                                                                                                                                                                                                                                            ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcag
                                                                                                                                                                                                                                                                                                                                                                         ------tettgetgtacetgggagtggcacagacatgtttettettageetta
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------gcttggagctgggggcccagtgactcgggtttaga--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1071
                            266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1157
                                               323
                                                                  326
                                                                                      380
                                                                                                        386
                                                                                                                             440
                                                                                                                                                 446
                                                                                                                                                                    499
                                                                                                                                                                                       502
                                                                                                                                                                                                           554
                                                                                                                                                                                                                               562
                                                                                                                                                                                                                                                   611
                                                                                                                                                                                                                                                                      621
                                                                                                                                                                                                                                                                                          670
                                                                                                                                                                                                                                                                                                                                   726
                                                                                                                                                                                                                                                                                                                                                     737
                                                                                                                                                                                                                                                                                                                                                                         772
                                                                                                                                                                                                                                                                                                                                                                                            797
                                                                                                                                                                                                                                                                                                                                                                                                                819
                                                                                                                                                                                                                                                                                                                                                                                                                                   857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      962
                                                                                                     g
                                                                                                                           ò
                                                                                                                                               Q
                                                                                                                                                                                  q
                                                                                                                                                                                                           οy
                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                              ò
                                                                                      ò
                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                  ò
```

AF043334 417 bp mRNA PRI 21-FEB-1998 Homo sapiens interleukin 13 precursor (IL13) mRNA, complete cds. AF043334

AF043334.1 GI:2905619

DEFINITION ACCESSION VERSION KEYWORDS

AF043334

LOCUS

```
/trānslation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cycles;
                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutèleostoml;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                      of
                                                     1 (bases 1 to 417)
Jang, J.S. and Kim, B.E.
Direct Submission
Submitted (15-JAN-1998) Protein Engineering, General Institute
Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong,
Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63 AGGCCCTGTGCCCTCCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCAC 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            293 aaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttc 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 GAAGACCCAGAGGATGCTGGGGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTC 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56 catggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 CATGGCGCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCTTGCCGTTTGCCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116 gagccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123 CCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGGTTTGGAGCATCAACCTGACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183 TGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176 ccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               233 eggeatgtactgegeagetetagaatetetgateaatgteteegaetgeagegeeateea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /PCR_conditions="94C-lmin, 50C-lmin, 72C-3min, DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                       forward primer (5'-ctcaatcctctcctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctctgc-3')
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 18.6%; Score 235.6; DB 88; Best Local Similarity 76.8%; Pred. No. 4.3e-52; Matches 315; Conservative 0; Mismatches 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="GI:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="interleukin
complement(394. .417)
/note="second PCR"
121 c 108 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64. .399
/gene="IL13"
                                                                                                                                                         Sosa-gu, Buche
Nested PCR:
1) first PCR :
  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        primer_bind
                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
ORGANISM
                                                                                             TITLE
JOURNAL
                                                                             AUTHORS
                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

g

ò Q οχ

```
Query Match
  intron
                                                                                  COUNT
                                                                                                                                                                                                                                                  404
                                                                                                                                                                                                                                                                                                                                                                                                                   572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    868
                                                                                                                                                                                                                                                                                                        464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          630
                                                                                                                                                                                                                                                                                                                                                              523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2966
                                            exon
                                                                                 BASE CO
ORIGIN
                                                                                                                                                                                               δ
                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MALLITANIVLICEGGLTSPSPVPSATALKELIEELVNITQNQK"
/translation="MALLILTANIVLICEGGLTSPSPVPSATALKELIEELVNITQNQK
vPlcNGSMWWSLNLTSSMYCAALDSLISISNCSVIQRTKKMLNALCPHKPSAKQVSSE
vrnotkievaQFlkDilrhsrivfrnerr"
join(718" 789,1742. .1795,2038. .2142,2484. .2588)
/gene="1113"
                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (19-JAN-1999) Buitkamp J., Tierzucht, TU-Muenchen, Alte
Akademie 12, 85350 Freising, GERWANY
Location/Qualifiers
                                                                                                                                                                                                                                                             Bovines, Bosines, Bosines, Ruminantia; Pecora; Bovoidea; Bovidae; Bovines, Bosines, Control, Jan., O. and Fries, R.

The cattle interleukin-13 gene: genomic organization, chromosomal Location, and evolution of the promoter Immunogenetics 49 (10), 872-878 (1999)
                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae;
cagtgaacgcagccagagacaccaaaattgaagtgatccagttggtgaaaaacctgctcac 409
                        303 caccrrccargrccagacaccaaaarcgaggrggcccagrrrgraaggaccrgcrcrr 362
                                                                                                                                                    10-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 join(588. .789,1742. .1795,2038. .2142,2484. .2591)
/gene="1113"
588. .2591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          join(658. .789,1742. .1795,2038. .2142,2484. .2591)
/gene="1113"
                                                    MAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="interleukin-13"
/protein_id="CAB46636.1"
/db_xref="GI:5420145"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'product="interleukin-13"
                                                                                                                                        bral32441 3520 bp DNA
Bos taurus ill3 gene, exons 1-4.
AJ132441
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .3520
/organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /chromosome="4"
/dev_stage="adult"
/map="4q23-31"
                                                                                                                                                                                         AJ132441.1 GI:5420144
ill3 gene; interleukin-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1S16b"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="ill3"
588. .789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        588. 789
/gene="1113"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              790. .1741
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2048. .2142
/gene="ill3"
/number=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1742. .1795
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     657. .717
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1796. .2047
/gene="ill3"
                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 3520)
Buitkamp, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'number=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="
                                                                                                                                                                                                                       Bos taurus.
                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                                         RESULT 10
BTA132441
                                                                                                                                                               DEFINITION
350
                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                                                                                                                                                                                                                                            MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                  LOCUS
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                        2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2846 ACAAGGGTGGACCTTGCCCCACATGACCTCCCTCCTCAAAACAAGTGTAGTGTTTATT 2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       522
                                                                                                                                                                                                                                                                                                                                                                                                                                                          571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   967
                                                                                                                                                                                                                                                 344 gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacct 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           897
                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                     2486 GGTTTCCAGTGACTACGACCCGAGACACCAAATTGAAGTGGCCCAGTTCTTAAAAGACCT
                                                                                                                                                                                                                                                                                                                                                                                        gcatccttatctgtagacccaga-cctgaccacttaagttccagattcatttttttttcc
                                                                                                                                                                                                                                                                                                                                                                                                        cagctgggacctcagcctgcaccgcctgcctccatggagctgagcccagccacccc-tg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2726 TAGCTTAGACTTGAGCCTGCGCTGCCTTCCTTGAGCCTACCCAACTTCAGCTGCCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccttggtgcatggggcccagccgggtggccctccgtctgcacttc---atcaacgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     742 ----acagtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtggcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         856 tgtgctggggacagggagtgg-----cttggagctgggggcccagtg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    933 tgt------gtaaaattctgctacctcactgggatctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1028 .tggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaataaaa
                                                                                                                                                                                                                                                                                                                    gctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgagggaaagcactgcatcccatgactgtcccctccagagcaaagtgcagcatt----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2906 AAACACCTGGTGGAGGAAACACCTGCTTTACACAGGGGCAACTGAGGCAAAAAGCACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ......actcgggtttagagagtccctgggataagcactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3086 AACTTGGGGCTCCAGCACTTAAAGCAGTGGGCATTAAGAAATCCCTGGCAATAAATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3146 TGTTTTGCAAAACTTCTTGCTACCTCCACTAAAACTTCTGCTACTCACTAGGGTCCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3266 GGGCCCTCAGCCAAA---TAATTTATTATTTTTCCTAGTATTTAAAGTTAAGTATTAAAAA
                                                                                                                                                                                                               Indels 125;
                                                                                                                                                                             Length 3520;
                                                                                                                                                                           Score 229.2; DB 7;
Pred. No. 2.8e-50;
0; Mismatches 253;
                                                                                                         873
                                                                                                         δ
                                                                                                         857
2143. .2483
/gene="ill3"
/number=3
2484. .2591
/gene="ill3"
                                                                                                                                                                             18.1%;
62.4%;
                                                                                                      934 C
                                                                                         /number=4
                                                                                                                                                                                             Best Local Similarity 62.4
Matches 626; Conservative
                                                                                                         ø
                                                                                                         856
```

°

```
Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ki,S.M., Mosmann,T.R. and Zurawski,G.R. inducible proteins secreted by leukocytes are uperfamily that includes leukocyte and inflammatory agents, growth factors, and ous activation processes
                                                                                                                                                                                                                                                                                                                                                   agcagtaatttattgtttttccttgtatttaaagttaag 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agttaataatatagaagagtagcctaaaaggctgcat 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cocatgactgtccctcctagagcaaagtgcagcatta 742
                                                                                                                                                                                                                                          p mRNA ROD 31-AUG-1994 secreted protein (P600) mRNA, complete cds.
                                                                                                                                  tgtgggaggggtcttgctgtacctgggagtggcacaga 798
                                                                                                                                                        TGGTCCACACAGGGCAACTGAGGCAGCAGCAGCTTGAG 753
                                                                                                                                                                                        828
GCCTCAGC-------596
                          gcccagccgggtggccctcctccgtctgcacttcatcaa 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s sequence version replaced gi:340930.
Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        secreted T cell protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Mus musculus"
"taxon:10090"
e="T helper cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
```

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
AF072807
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                           859
                                                                                                                                                                                                                                                                                                                                                       1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                     996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
        δ
                                            qq
                                                                                           à
                                                                                                                               g
                                                                                                                                                                              δλ
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Op
                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                          /codon_start=1
/product=1 cell secreted protein"
/product=1 cell secreted protein"
/protein_id="AAA40149.1"
/db_xref="G1:533247"
/db_xr
                                                                                                                                                                                                                                                                                                                                                                                                                      13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cctcggtggccttgcctccccg------agccctgtgactccctccccaacct 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      c---agtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtggcacaga 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      348 TAACCGCAAGGCCCCCACTACGGTCTCCA-----GCCTCCCCGATACCAAAATCGAAGT 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   402 AGCCCACTTTATAACAAACTGCTCAGCTACAAAAGCAACTGTTTCGCCACGGCCCCTT 461
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              288 GACCAACATCCCAATTGCAATGCCATCTACAGGGACCCAGAGGATATTGCATGGCCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            tectgeattggetetgggeteeatggegetetggttgaetgtggteattgeteteaectg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         168 TAAGGAGCTTATTGAGGAGCTGAGCAACATCACAAAGACCAGACTCCCCTGTGCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            263 gatcaatgictccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             383 gatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                443 cagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaagtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     497 GTGGACTCATTTTCCTTTCTCACATCAGACTTTGCT-----GGGAGAGAGACAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cgctgagggaaagcactgcatcccatgactgtccctcctcagagcaaagtgcagcatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         323 ctctcaaaagcccgcggcagggatttccagtgaacgcagccgagacaccaaaattgaagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            551 GGGTTGAGGAAGGGACATGCCTCAGC------TTTGGCCTCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                623 accoctgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597 craccraccragacreaggarcreaggereresceraceceaececeaecece--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 127;
                                                                                                                                                                                                                                                                                                                                                                         94; Length 1207
                                                                                                                                                                                                                                                                                                                                                                       Score 208; DB 94; Pred. No. 1.1e-44; O; Mismatches 410;
                                                                                                                                                                                                                                                                                         u
                                                                                                                                                                                                                                                                                      285
                                                                                                                                                                                                                                                                                      Б
                                                                                                                                                                                                                                                                                    308
/note="P600"
70, 465
                                                                                                                                                                                                                                                                                                                                                                         / Match 16.4%;
Local Similarity 57.0%;
nes 711; Conservative
                                                                                                                                                                                                                                                                /note="P600"
                                                                                                                                                                                                                                                                                  338 C
                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                    276
                                                                                                                                                                                                  polyA_signal
                                                                                                                                                                                                                                          polyA_site
                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      743
                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
```

```
1 (bases 1 to 343)
Trigona,W.L., Brown,W.C. and Estes,D.M.
Functional implications for signaling via the IL4R/IL13R complex on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITONQK
VPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
cora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (16-JUN-1998) Veterinary Pathobiology, University of
Missouri-Columbia, W213 Veterinary Medicine Building, Columbia,
65211, USA
                                                                                                                                                                                                                                                                                                                   1078
                                                                                                                                                                                                                                                                                                                                                                                          gggccgacacaggggacaggagaaag-----ggtcagagatgctgctcttgtctgcca 1018
                                                                                                                                                                                                                                                                                                                                                      993 GGCAGCAACCAGCCTCCAGCCATGAAATAACTTATTGTT-----TTGTTCTTATATTTAA 1047
                                                                                                                                                          965
                                        812
                                                                                                                      872
                                                                                                                                                                                                                                                                            992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JAN-2000
mRNA, partial cds
ctcagcagctggcctcagccaagcagtaatttattgtttttccttgtatttaaagttaa
                                                                                                                                                                                                                                                                  933 AGGICTCACCCAGGCAGGAGGAGGGGAGGCCAGAGCAACACICCIGICTGCCAC
                                                                             gctggggacagggatggcttggagctgggggcccagtgactcgggtttaga-----
                                                                                                   813 ATCCCGGTGGGACATGGTTTGCTGCCTATGCCCTGGGGGCTCCAGCATTGAAGCAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1108 GGTGATGTGTAGTGAATG-----GGGGGAGGGTGGTGGGTTTGTCACTGAACAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peripheral T lymphocytes'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vet. Immunol. Immuñopathol. 72 (1-2), 73-79 (1999)
20080132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus interleukin-13 precursor (IL-13) AF072807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 343)
Trigona, W.T., Hirano, A. and Estes, D.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="interleukin-13
/protein_id="AAD22748.1"
/db_xref="GI:4558814"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .343
/organism="Bos taurus"
/db_xref="taxon:9913;"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cell_type="activated
1. .>343
/gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:4558813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IL-13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .>343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF072807.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF072807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10614495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COV
```

```
Search completed: May 13, 2001, 14:25:11
Job time: 19391 sec
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           316
                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                 RESULT
I58489
                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                     LOCUS
                                          g
                                                                 òγ
                                                                                      a
                                                                                                                                ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                      οy
                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .,
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Brotein having cytokin type activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 23 30-SEP-1992;
                                                                                                                                                      180
                                                                                                 116
                                                                                                                                        117 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 176
                                                                                                                                                                                      233
                                                                                                                                                                                                                                 293
                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                            350
                                                                                                                                                                                                                                                                                      tececegagecetgtgaetecetececaaeceteaaggageteattgaggagetggteaae 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                     09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                 23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc
                                                                                                 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                     cagaatc---aggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgcc
                                                                                                                                                                                                  ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                          aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggc---agggatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9;
                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 384;
                                                       Length
                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                 agtgaacgcagccgagacaccaaaattgaagtgatccagttgg 393
                                                                                                                                                                                                                                                                                                                                                                                                 PAT
                                                                           67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 193.4; DB 9;
Pred. No. 7.9e-41;
0; Mismatches 81;
                                                      DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .384
/organism="synthetic construct"
/db_xref="taxon:32630"
/ 104 c 99 g 84 t
                                                     Score 203.8; DB 7
Pred. No. 1.3e-43;
                                                                          0; Mismatches
           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
            б
                                                                                                                                                                                                                                                                                                                                                                                                 DNA
          85
                                                                                                                                                                                                                                                                                                                                                                                                           B.
YVRDTKIEVAQF"
101 c
                                                                                                                                                                                                                                                                                                                                                                                               A29950 384 bp
Nucleic acid fragment
A29950
A29950.1 GI:1249030
                                                     16.18;
78.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthetic construct,
synthetic construct
artificial sequence,
1 (bases 1 to 384)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 15.2%;
Best Local Similarity 75.5%;
Matches 268; Conservative (
                                                                           Conservative
                                                                Similarity
           æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                          270;
                                                     Query Match
                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
A29950
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
          BASE COUNT
                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111
                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                               61
                                                                                                                                                                                   177
                                                                                                                                                                                                         121
                                                                                                                                                                                                                               234
                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                          294
                                                                                                                                                                                                                                                                                                                     351
                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
```

Ω ò QQ

ò Db óλ 셤 ò qq

ò

q

ŏ

g

δ

δ

ò

```
for
                                                                                                                                                                                                                                                                                                                                 (bases 1 to 384)
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195
                           344
                                                   255
                                                                              404
                                                                                                        315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 teceegageeetgtgaeteeeteeecaaceeteaaggageteattgaggagetggteaae 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             315
136 ACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCC 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                              07-0CT-1997
                                                                          171 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256 TTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16 TCCCCAGGCCCTGTGCCTCCTCTACGCCCCTCAGGAGCTCATTGAGGAGCTGGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405 ctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 193.4; DB 10;
Pred. No. 7.9e-41;
0; Mismatches 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            u
                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                         5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="unknown"
104 c 99 a
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                         ns
                                                                                                                                                                                                                       Sequence 17 from patent 158489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 15.2%;
Local Similarity 75.5%;
Nes 268; Conservative
                                                                                                                                                                                                                                                                   GI:2477727
                                                                                                                                                                                                                                                                                                                         Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                   158489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                             Unknown
```

ä

)

Canine interleukin Human biallelic po

F21331 A35209 A35215 A35215 Z55552 X11363 X11367

Human biallelic Human biallelic Human biallelic

Human adenosine re

Human biallelic po Human biallelic po Human biallelic po Human biallelic po Cytokine signal se Plasmid pZPC13 enc

Q28941 X11362 X11364 X11366 X11368 X11370 Q28942

X11371

ALIGNMENTS

980900

Human biallelic p Cytokine signal s Human biallelic p

Sequence encoding G1y41-Cytokine cod Asp41-Cytokine cod Human low adenosin Human low adenosin

228943

228944

Human low adenosin Human adenosine re Cytokine NC30. O Canine mature inte

low adenosin Human adenosine re

Human ]

A35211 F21338

A35216

Canine mature inte Canine mature inte Canine mature inte

Z55565 Z55566 Z55556 Z55559 Z55554 Z55553 Q56693

Canine interleukin Canine interleukin

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= a
/product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
57..449
                                                                                                                                                                                                                                                                                                                                                                              Z55561 standard; cDNA; 1269 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
         WPI; 2000-072623/06
P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 familiaris.
228.5
228.5
228.5
228.5
225.0
225.0
225.0
227.7
27.7
                                                                                                                             14.8
113.1
113.1
12.1
12.1
12.1
12.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                  14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-DEC-1999
                  362
362
362
358
330
330
317
317
278
278
216.4
                                                                                                                             187.4
185.8
166
166
166
166
                                                                                                                                                                                                             60.4
                                                                                                                                                                                                                                                                                                                                                                                                255561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis
RESULT
                                                                                                                                                                                                                                                                                                                                                                      Z222E
                                                                          O
                                                                                          U
                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin
Canine interleukin
Canine interleukin
Canine interleukin
Canine interleukin
Canine interleukin
Canine interleukin
Human low adenosin
Human adenosine re
                                                                       (without alignments)
1569.464 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        results predicted by chance to have a
l to the score of the result being printed
of the total score distribution.
                                                                                                                   ccagoctacgacotgcotgc.......gaaaaaaaaaaaaaaaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                 /cgnl_8/gcgdata/geneseq/geneseqn/Na1991.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1981.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1981.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1981.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1985.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1986.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1986.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1988.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1989.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/Na1990.DAT:*
                                                              May 13, 2001, 14:29:55; Search time 472.02 Seconds
                                                                                                                                                                                                                                                                                                                                                                                               .DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                .DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                          /cgnl_8/gcgdata/geneseq/geneseqn/NA1996.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1997.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA2000.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqn/NA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                        DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                          DAT: *
                                                                                                                                                                                                                                                                            /cgn1_8/gcgdata/geneseq/genesegn/NA1980.DAT:*
                                                                                                                                                                                   1356552
                                                                                                                                                                                                                                                                                                                                                                                       /cgnl_8/gcgdata/geneseq/geneseqn/NA1992.
/cgnl_8/gcgdata/geneseqn/NA1993.
/cgnl_8/gcgdata/geneseq/geneseqn/NA1994.
/cgnl_8/gcgdata/geneseq/geneseqn/NA1995.
         GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                678276 seqs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                            nucleic search, using sw model
                                                                                                                                                                                                                                      Maximum Match 100%
Listing first 45 summaries
                                                                                                                                    IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Z55562
Z55563
Z55563
Z55564
Z55564
Z55557
Z55557
Z55558
F21334
F21334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                score greater than or equal to
and is derived by analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ü
                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                  US-09-451-527-99
                                                                                                                                                                                                                            Post-processing: Minimum Match 08
Maximum Match 10
                                                                                                                                                                                                                                                                   N_Geneseq_0401:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         is the number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1269
1269
1302
1302
390
393
393
1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
                                                                                                           1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289.
                                                                                                                                                                                                                                                                                                                                                                                                                16:
17:
18:
19:
                                                                                                                                                                                                                                                                                                                                                            ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.
                                                                                                                                                                                                  Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1269
1251
1251
390
377
362
362
                                                                                                           Perfect score:
                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                              .
                                            nucleic
                                                                                                                                                                                                                                                                   ..
                                                                                                                    Sequence:
                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                  Database
                                                              on:
                                                                                                  Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                              Run
                                            ΜO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O
```

Wonderling RS;

N

```
Sequences 25552-255560 and 255561-25566 represent CDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine or feline CDL4, canine or feline CDL5 (ELIne CDD4), canine IL-5, canine IL-13, feline (IL-4, canine CDT54 (CD40 ligand), canine IL-5, canine IL-13, feline colony-stimulating factor (GMCSF), and nucleotides which encode these colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
             immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atcaggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgccggcatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaacgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ccagectacgaectgectgetetteectegetectgeattggetetgggetecatgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctgtgactccctcccaacctcaaggagctcattgaggagctggtcaacatcacccaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atcaggcatccctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccggcatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      actgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaaggaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agaggatgctgaaagcactgtgctctcaaaagcccgcgggggatttccagtgaacgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgtaaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gagtttatcgccatggaaatttcagatgaagcatgaaaacttagcatccttatctgtaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cccagacctgaccacttaagttccagattcattttttttccgacgtcacaaatttctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                           T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seguence 1269 BP; 302 A; 320 C; 340 G; 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1269;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                  Claim 11; Page 235-236; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 1269; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           drug targetting.
             acids encoding
                                  for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                 Nucleic
                                    useful
                                                                                                                                                                                                                                                                                                                                                                                                                             and in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

gggaggtgggggggggaaccattcctcagctgggacctcagcctgcaccgcctgc

541

481

do Qy Db

```
1080
                                                                                                                                                                                                                                   1080
                                                                                                                                                                                      1020
                                                                                                                                                                                                    1020
                                                                                          840
                                                                                                                                                                       960
                                                                                                                                                                                                                                                  acaagtgtctttgtttgtgctggggacagggagtggcttggagctggggggcccagtgact
                                                                                                                                cgggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactggga
                                                                                                                                                               tectgggggecgacacaggggacaggagagagaggtcagagatgetgetettgtetgecaet
                                                                                                                                                                                                                    cagcagctggccctcagccaagcagtaatttattgttttccttgtatttaaagttaaga
                                                                                                                                                                                                                            ctccatggagctgagcccagccaccctgccttggtgcatgggggcccagccgggtggccc
               ctccatggagctgagcccagccaccctgccttggtgcatggggcccagccgggtggccc
                              tectecgtetgeaetteateaegetgaggaaageaetgeateceatgaetgteeete
                                                             ctcagagcaaagtgcagcattacagtggaggcagatatgtgtgggaggggggtcttgctgt
                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune resf
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Canine IL-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                   CDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                      aaaaaaaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                   255562 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                  255562
                                                                                                                                                                                                                                                                                                                                                                                   ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis
                                                                                                                        841
                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                 1141
                                                                                                                                                                                                                                                                                                1141
                                                                                                                                                                                                                                                                                                               1201
                                                                                                                                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                                                                                                                                                                                                                                                             1261
                             661
                                                            721
                                                                                          781
                                                                                                                                       841
                                                                                                                                                                                      961
                                                                                                                                                                                                                                                  1081
601
               601
                                            661
                                                                          721
                                                                                                         781
                                                                                                                                                       901
                                                                                                                                                                      901
                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                          255562/c
ID 2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Key
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                        g
                                                                                                                                                                      g
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                            g
            QQ
                            δ
                                                           δ
                                                                          g
                                                                                         õ
                                                                                                                        Qγ
                                                                                                                                      q
                                                                                                                                                      ò
                                                                                                                                                                                      ð
                                                                                                                                                                                                   qq
                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                  οχ
                                                                                                                                                                                                                                                                                                               ŏ
```

```
Sequences 25552-25560 and 255561-25556 represent CDNA, sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine conformed in the conformed in the conformed interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleides which encode these interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleides which encode these immunorequiatory proteins. The proteins, their associated immunorequiatory proteins. The prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctgtgactcccccaaccctcaaggagctcattgaggagctggtcaacatcacccaga 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egetetegyttgaetgtggteattgeteteacetgeeteggtggeettgeeteecegagee 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                            for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    actgogoagototagaatototgatoaatgtotoogaotgoagogooatooaaaggacoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atcaggcatccctctgcaacggcagcatgtgtgtggagcgtcaacctgaccgccggcatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ccagcctacgacctgcctgctcttccctcgctcctgcattggctctgggctccatgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 21; Length 1269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
0
                                                                                                                                                                                         acids encoding immunoregulatory proteins from cats or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 1269;
100.0%; Pred. No. 0;
tive 0; Mismatches
                                                                                                            Wonderling
                                                                                                                                                                                                                                            Claim 1i; Page 237-238; 264pp; English
                                                                                                              MJ,
               99WO-US11942
                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.
Best Local Similarity 100.
Matches 1269; Conservative
                                                                                                            Yang S, Dreitz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and in drug targetting.
                                                                                                                                           WPI; 2000-072623/06.
P-PSDB; Y58223.
                                                                              (HESK-) HESKA CORP.
                                              29-MAY-1998;
               28-MAY-1999;
                                                                                                                                                                                             Nucleic
                                                                                                                                                                                                              nseful
                                                                                                              ပဲ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                              Sim
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
1080
                                                                                                                                                                                                                                                                                                                                                               1140
                                                                                                                                                                                                                                                                                                                                                                                                                               1260
                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                               1200
480
                                540
                                                                900
                                                                                                099
                                                                                                               610
                                                                                                                                720
                                                                                                                                                550
                                                                                                                                                                780
                                                                                                                                                                               490
                                                                                                                                                                                                840
                                                                                                                                                                                                                430
                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                               370
                                                                                                                                                                                                                                                                960
                                                                                                                                                                                                                                                                               310
                                                                                                                                                                                                                                                                                                                                               190
                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                              10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                tcctgggggccgacacaggggacaggagaaagggtcagagatgctgctcttgtctgccact
                                                                                                                                                                                                                                                                                                                                     aataaaaatattatcaaagagttaataatatagaagagtagcctaaaaggctgcatt
gagtttatcgccatggaaatttcagatgaagcatgaaaacttagcatccttatctgtaga
                                                                                                                                tcctccgtctgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctc
                                                                                                                                                                ctcagagcaaagtgcagcattacagtggaggcagatatgtgtgggagggggtcttgctgt
                                                                                                                                                                        acaagtgtctttgttgtgctggggacagggagtggcttggagctgggggcccagtgact
                                                                                                                                                                                                                                                               cgggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactggga
                                                                                                                                                                                                                                                                                                       cagcagetggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaaga
                                                                                                                                                                                                                                                                                                                                                                      849 GAGTTTATCGCCATGGAAATTTCAGATGAAGCATGAAAACTTAGCATCCTTATCTGTAGA
                                                                 gggaggtggggggggggagaaccatttcctcagctgggacctcagcctgcaccgcctqc
                                                                                                ctccatggagctgagccagccatgccttggtgcatggggcccagccgggtggccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              aaaaaaaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                              249
                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                             189
                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
421
                                                789
                                                                541
                                                                               729
                                                                                               601
                                                                                                               699
                                                                                                                               661
                                                                                                                                               609
                                                                                                                                                               721
                                                                                                                                                                               549
                                                                                                                                                                                               781
                                                                                                                                                                                                               489
                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                               429
                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                              309
                                                                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25555
                                              QQ
                                                                               엄
                                                                                                             qq
                                                                                                                                              g
                                                                                                                                                                             Db
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                ò
                                                                ò
                                                                                               ò
                                                                                                                               ò
                                                                                                                                                               ò
                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

850

696 361

Db

```
gcagetetagaatetetgateaatgteteegaetgeagegeeateeaaaggaeeeaqaag
aaaaaa 1267
                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                              603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1263
                                                                                                                    363
                                                                                                                                                     361
                                                                                                                                                                                       423
                                                                                                                                                                                                                                                          483
                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                             543
                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
               q
                                                 δ
                                                                               QQ
                                                                                                                    ò
                                                                                                                                                    d
                                                                                                                                                                                     οy
                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                              òγ
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequences 255552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Filt-13 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRPN-alpha) and feline granulocyte macrophage colony-stimulating factor (GWCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the colony of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcagetetagaatetetgateaatgteteegaetgeagegeeateeaaaggaeeeagagg 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctacgacctgcctcttccctcgctcctgcattggctctgggctccatggcgctc 65
                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                  clone 80°
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1251; DE Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                           RS
                                                                                                                                                                                                                                                                                                          Wonderling
                                                                                                  "Canine IL-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 11; Page 229-230; 264pp; English
                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98.6%;
99.8%;
                                                                                                                                                                                                       99WO-US11942
                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                           ž
                                                                                    Ø
                                                                                                    /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 99.8
Matches 1264; Conservative
                                                                                                                                                                                                                                                                                                           Yang S, Dreitz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting
                                                                                                                                                                                                                                                                                                                                         2000-072623/06
                                                                                                                                                                                                                                                                          CORP
               familiaris
                                                                                                                                                                                                                                                                                                                                                             P-PSDB; Y58221
                                                                                                                                                                                                                                                                          (HESK-) HESKA
                                                                                                                                    W09961618-A2
                                                                                                                                                                                                       28-MAY-1999;
                                                                                                                                                                                                                                       29-MAY-1998;
                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                           Ö
               Canis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          246
                                                                                                                                                                                                                                                                                                           Sim
                                                 Key
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1262
                                                                                                                                                                                                                                                                                                                                                                                                               1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602
                                                                                                                                                                    600
                                                                                                                                                                                       662
                                                                                                                                                                                                        999
                                                                                                                                                                                                                          722
                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                             782
                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                   842
                                                                                                                                                                                                                                                                                                                    840
ggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                                                                                                                                                                                                               ctggggccgacacaggggacaggagaaaggtcagagatgctgcttgtctgccactca
                                                                                                                                                                                                                                                                                                                                                                                                                         ctccgtctgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcct
                                                                                                                                                                                                                                   cagagcaaagtgcagcattacagtggaggcagatatgtgtggggagggggtcttgctgtac
                                                                                                                                                                                                                                                                                                                                                                                             ggtttagagagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtttatcgccatggaaatttcagatgaagcatgaaacttagcatccttatctgtagacc
                                                                                                              taaaatatgttatcaaagagttaatatatatagaagagtagcctaaaaggctgcatttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aaaaaa 1269
```

S

```
Sequences 25552-25560 and 255561-25556 represent CDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine confine CDL4, canine or felline CDL5 (CD40 ligand), canine iL-5, canine IL-13, felline CDL54 (CD40 ligand), canine IL-15, canine IL-13, felline cDL54 (CD40 ligand), canine IL-5, canine IL-13, felline CDL54 (CD40 ligand), canine IL-6, canine CDL74 (CD40 ligand), canine IL-6, canine CDL74 (CD40 ligand), canine CDC colony-stimulating factor (GMCSF), and nucleotides which encode these concletc acids, specific antibodies and inhibitors may be used as uncleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune confinement or infectious diseases including They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while concletion farged in thibitory therapeutics (e.g., antisense oligonucleotides).

They proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and the control of a protein.
                                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                  Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                   /product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1i; Page 231-232; 264pp; English.
                                                                                                                                                                                                                                                                Location/Qualifiers
complement (856..1251)
                      BP.
                     Z55556 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP
                                                                                                                                                                                                                           Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yang
                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ğ,
Z55556/c
```

Query Match
Best Local Similarity 99.8%; Pred: No. 0;
Matches 1264; Conservative 0; Mismatches 0; Indels 3; Gaps 1;

Qy 6 ctacgacctgctcttccctcgctcctcctgcattggctctgggctccattggctcc 65

66 tggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtg 125

1302

g

ò

1022 1082 1142 1242 TGGTTGACTGTGGTCATTGCTCTCACCTGCCTCGGTGGCCTTGCCTCCCCGAGCCCTGTG 1183 1143 gtgtgtgtgtcaggccggggcgggtggggggggggggtgttgtcactgaatgtgctctt 1202 245 305 362 943 842 962 283 163 422 883 482 823 542 763 602 703 662 643 722 583 782 523 463 103 306 atgotgaaagcactgtgotctcaaaagcccgcgggcagg---gatttccagtgaacgcagc 1182 ACTCCCTCCCACCCTCAAGGAGCTCATTGAGGAGCTGGTGGTCAACATCACCAGAATCAG 246 gcagetetagaatetetgateaatgteteegaetgeagegeeateeaaaggaeeeagagg 282 GCAGCTGGCCCTCAGCCAAGCAGTAATTTATTGTTTTTCCTTGTATTTAAAGTTAAAGAAA 186 gcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgc 963 ctggggccgacacaggggacaggagaaaagggtcagaggtcagactgctgtctgccactca 1023 gcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaagaaa taaaaatatgttatcaaagagttaataatatagaagagtagcctaaaaggctgcatttg 126 actecetececaacecteaaggageteattgaggagetggteaacateaceagaateag 1083 q g g g qq qq a qq qq pp g òγ οy ò q ò g ă ò 셤 QQ ò δy qq δy δ ò Ω δ à οy ò ŏ

9

57

```
Sequences 25552-25560 and 255561-25566 represent CDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-13, feline
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumnors, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune resp
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                      Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 11; Page 238-239; 264pp; English.
                                                                                                                                                                                                         Z55563 standard; cDNA; 390 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dreitz MJ,
                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HESK-) HESKA CORP
                                                                          1263 aaaaaaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang S,
                                                                                                           AAAAAA 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; Y58223
                                                                                                                                                                                                                                                                                 14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                     W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                              255563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ບ`
                                                                                                             42
                                                                                                                                                                  RESULT
Z55563
ID Z5
                                 g
                                                                        ò
                                                                                                           d
```

```
Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine LL-4, canine or feline Flt-13 ligand, canine or feline CD14 (CD40 ligand), canine IL-5, canine IL-13, feline interferon alpha (IFN alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
                                                                                                                                                     296
                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                     atgtactgcgccagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                  acccagaagaatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa
                                                                                                                                                                                                                                                        cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctatgta
                                                   agecetgtgaeteceteceaaceteaaggageteattgaggagetggteaacateaee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wonderling RS;
                                                                                                                                                                                                                                                                                                        Claim 11; Page 239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                               BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                             Z55564 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                      255564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                          61
                                                                                                   177
                                                                                                                           121
                                                                                                                                                    237
                                                                                                                                                                             181
                                                                                                                                                                                                      297
                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                      357
                                                                                                                                                                                                                                                                              301
                                                 117
                                                                                                                                                                                                                                                                                                                                                                                   Z55564/c
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                        qq
                                                                                                                          qq
                                                                                                                                                 ολ
                                                                                                                                                                          g
                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                        ò
                                                ò
                                                                                                  ò
                                                                                                                                                                                                    δ
```

ó

Gaps

; 0

Indels

ó:

30.7., 100.0%; Pred. No.

Conservative

Best Local Similarity Matches 390; Conserv

Query Match

30.7%; Score 390; DB 21; Length 390; 100.0%; Pred. No. 3.3e-97;

Wonderling

Dreitz MJ,

'n

Sim G,

```
0;
             response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nuclectide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 116
                                                                                                                                                                                                                                                                                                                                                               117 agecetgtgactecetececaaceeteaaggageteattgaggagetggteaacateace 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 416
                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90 cecaecceaeacaccaaaatreaagrearccagrregreaaaaaccrecraccrargra 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                    cagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
 vaccines for therapeutic or prophylactic regulation of an immune
                                                                                                                                                                                                                                                                       .;
0
                                                                                                                                                                                                                                        Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                      Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                     30.7%; Score 390; DB 21;
100.0%; Pred. No. 3.3e-97;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggggagtttatcgccatggaaatttcaga 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30 AGGGGAGTTTATCGCCATGGAAATTTCAGA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                    Best Local Similarity 100.
Matches 390; Conservative
                                                                                                                                                         and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255557 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-MAR-2000
                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                             177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255557
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
Sequences 25552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fil-3 ligand, canine or feline CD00, canine or
IL-4, canine or feline Fil-3 ligand, canine IL-13, feline
IL-4, canine or feline Fil-3 ligand, canine IL-13, feline
interferon-alpha (FN-3lpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (DMCSF), and inhibitors may be used as
colony-stimulating factor (DMCSF), and inhibitors may be used as
conclete acids, specific antibodies and inhibitors may be used to treat autoimmune or infectious diseases including
concletions from a co-administered antiped. The nucleotide sequences
con also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
concletion primary and detection, and concletion and primary and as sources of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                           Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acccagaggatgetgaaagcactgtgeteteaaaageeegegggaagggeagattteeagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atglactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 29.7%; Score 377; DB 21;
Best Local Similarity 99.2%; Pred. No. 1.2e-93;
Matches 390; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtaaggggagtttatcgccatggaaatttcaga 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 11; Page 232-233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z55558 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and in drug targetting.
                                   2000-072623/06
                                                      P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Z55558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z55558/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                XXXX
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
```

ij

œ

297

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oilgonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine LL-4, canine or feline Flt-3 ligand, canine or feline CD4, canine interferent alpha (IFN-alpha) and feline granulocyte macrophage (colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                 Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement
                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 233; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; Y58221
14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                              W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sim G,
```

```
The present invention describes low adenosine (A) content antisense oligonucleotides and compositions (I) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (I) can have respiratory, bronchoolidator, antiinflammatory, analgest, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (I) can be used to down-regulate the expression and or activity of target polypeptides associated with lung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, cytokine and
                                                                                                                  Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  chemokine receptors, adenosine receptors, bradykinin receptors, central nervous system (CNS) and peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system transmitters, defensins, growth factors, vasoactive peptides and
                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 1336; 1592pp; English.
                                                                                                                                                                                                                                                       cancers and respiratory obstructions
WPI; 2000-679539/66.
```

1;

Gaps

<u>ب</u>

29.7%; Score 377; DB 21; Length 393; 99.2%; Pred. No. 1.2e-93; tive 0; Mismatches 0; Indels

Best Local Similarity 99.2 Matches 390; Conservative

Query Match

g

ò g ò pp ò

ò

117 agcctgtgactcctccccaacctcaaggagctcattgaggagctggtcaacatcacc 176

333 AGCCTGTGAGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTGAACATCACC

237 213

q

;

```
human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antiinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
                                          413
                                                              34
                                                                                                                                                                                                                          Human low adenosine antisense oligonucleotide related sequence #2901
                                                                                                                                                                                                                                              Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat
                                                                                   414 gtaaggggagtttatcgccatggaaatttcaga 446
                                                                                               BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                24-MAR-2000; 2000WO-US08020
                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0127958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UYEC-) UNIV EAST CAROLINA.
                                                                                                                                                           F21334 standard; DNA; 1270
                                                                                                                                                                                                     14-MAR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NYCE/) NYCE J W.
                                                                                                                                                                                                                                                                                                                                                                                      WO200062736-A2.
                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                           26-0CT-2000.
                                                                                                                                                                                                                                                                                                                                              cancer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nyce JW;
                                                                                                                                                                                F21334;
                    153
                                         354
                                                                                                       33
                                                                                                                                                                                 g
                                        ò
                                                             Dp
                                                                                   ò
                                                                                                      pp
```

```
condition selected from pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. R18434 to F21543 represent human polynucleotide fragments and antisense oligonucleotides used in the exemplification of the
                                                                                                                                   or
receptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction (especially pulmonary obstruction and/or broachoconstriction) and/or lung inflammation, allergy(ies) and/or surfactant hypoproduction which are associated with a disease c
                                                                                                                                                                                                                                                                                                                                                                present invention
      8888888888888888888888888
```

Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;

```
13;
                                                                                                                                                                                                                                                                                                                379
                                                                                                    202
                                                                                                                                                                                                                                                                                                                                         373
                                                                                                                                                                                                                                                                                                                                                                                                                                               489
                                                                                                                                                                                                             262
                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                             322
                                                                                                                                                                                                                                                                                                                                                                   439
                                                                                                                                                                                                                                                                                                                                                                                                                      498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85
                            Gaps
                                                                            73
                                                  cctcgctcctcctgcattggctctgggctccatggcgtctggttgactgtggtcattgc
                                                                            ceteaatectetettggcaetgggcetcatggcgettttgttgaccaeggteattge
                                                                                                                                                                                                                                                                                                                             agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                        ggagctcattgaggagctggtcaacatcaccagaatc---aggcatccctctgcaacgg
                                                                                                                                                                                                                                   cagcatggtatggagcatcaacctgacagctggcatgtactgtgcagccctggaatccct
                                                                                                                                                                                                                                                           gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                      gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                                                                                                                                                                                                                                                                                                                                                                                                   ggagctcattgaggagctggtcaacatcacccagaaccagaaggctccgctctgcaatgg
                                                                                                                                                                                                             cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                ctctcaaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                   agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                           ggtggcccagtttgtaaaggacctgctcttacatttaaagaaactttttcgcgagggacg
                                                                                                                                                                                                                                                                                                                                                                                                                    tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agttgcagattcatttttctttctgatgtcaaaaatgtcttgggtaggcgggaaggaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ttagggaggggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgagcccagccaccctgccttggtgcatggggcccagccgggtggcctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agttccagattcatttttctttccgacgtcacaaatttcttagggaggtggggg----
                            Indels 111;
 DB 21; Length 1270;
 Score 362; DB 21; DP 21; DP 21; DP 20; No. 36-89; DP Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      =
=
=
=
Query Match 28.5%;
Best Local Similarity 66.0%;
Matches 777; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       999
                                                    56
                                                                            14
                                                                                                                            74
                                                                                                                                                       146
                                                                                                                                                                               134
                                                                                                                                                                                                          203
                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                             263
                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                              323
                                                                                                                                                                                                                                                                                                                                        314
                                                                                                                                                                                                                                                                                                                                                                 380
                                                                                                                                                                                                                                                                                                                                                                                                                    440
                                                                                                                                                                                                                                                                                                                                                                                                                                              434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        725
                                                    ð
                                                                           q
                                                                                                                       q
                                                                                                                                                                              qq
                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                     ò
                                                                                                                                                      ò
                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                          ò
```

```
The present invention describes a new composition comprising an antisense oligonuclectide (ON) with low adenosine (up to 158), which targets
                                                                                                                                                                                                                                                                                             Human; adenosine receptor; low adenosine antisense oligonucleotide; phosphorothioate; impaired respiration; inflammation; allergy; allergic disease; bronchoconstriction; inhibitor; antinflammatory; antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischaemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
                                                                                                                                                                                                          ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt 1024
                                                                                                                                                                                                                                                                    cctgggggcctcggagcctcatccgaggcagggtcaggagaggggggaagaacagccgctcct 1084
                                                         875
                                                                                      904
                                                                                                                                               964
                                                                                                                                                                              961
                                                    cctgggggc-----gacacaggggacaggagaaagggtcagagatgctgctctt
                                                                                                                                                 gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                           -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or
--tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                           cacttcacacaggggaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human adenosine receptor related polynucleotide 2nd SEQ ID NO:86.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       leukaemia; lymphoma; carcinoma; metastasis; ss.
                                                                                                                   -gcttggagctgggggccagtgactcgggtttaga
                                                                                                                                                                                                                                                                                                                                                         1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                       -----atattaaatatgttagcaaagagttaata 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 1251-1252; 1343pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US17712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0095212
                                                                                                                                                                                                                                                                                                                                                                                                                                                               A35212 standard; DNA; 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYEC-) UNIV EAST CAROLINA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-205971/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200009525-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24 - FEB - 2000
                                                                                                                                                                                                                                                                                                                                                                                        aa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A35212;
                                                                                                                                                                                                                                                                                                                                                                                                                                  10
                                                                                   845
                                                                                                                                              905
                                                                                                                                                                                                        965
                                                                                                                                                                                                                                      962
                                                                                                                                                                                                                                                                   1025
                                                                                                                                                                                                                                                                                                                                                                                       1145
                           785
                                                      819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nyce
                                                                                                                876
                                                                                                                                                                           911
                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
A35212
                                                                                q
                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                       ò
                                                                                                                à
                                                                                                                                            g
                                                                                                                                                                           ò
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                         δ
```

---agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctgtcc

the inflammation. The ON can have antiinflammatory, antiallergic, antialization of an analgasic activities. The compositions are useful for the treatment of diseases associated with inflammation, impaired alrways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating e.g. ischaemic conditions, pulmonary vasconstriction, allergies, asthma, impeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), and cancers such as leukaemias, lymphomas, carcinomas, and cancers which may metastasise to the lungs, including breast and prostate cancer. The reduction of the adenosine content of the release of deoxyadenosine which activates adenosine content of the release of deoxyadenosine which activates adenosine receptors causing bronchoconstriction and inflammation, A32313 to A35312 represent the nucleotide sequences given in the sequence listing from the present throwtion, which correspond to SEQ ID NO:1 to 2815, and then the last 185 sequences are also called SEQ ID NO:1 to 185, but the sequences differ from the previously named sequences. SEQ ID NO:11 to 1680 (A32323 to A33992) are specifically claimed ONs from the present invention. N.B. Sequences given in the disclosure of the present invention do not match up with their corresponding SEQ ID NO: sequences given in the nucleic acids involved in bronchoconstriction, allergies, and/or Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other; sedneuce 

13; teteacetgecteggtggcettgectecegagecetgtgacteceteceaaceteaa 145 133 322 380 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 439 699 cotogotoctoctgoattggctctgggctccatggcgctctggttgactgtggtcattgc 85 74 teteactigeetiggeggettigeeteeceaggeeetgigeeteetetacageeeteag 134 ggageteattgaggagetggteaacateacecagaaceagaaggeteegetetgeaatgg ggagetcattgaggagetggtcaacatcacccagaatc---aggcatccctctgcaacgg ctctcaaaaagcccgcggcagg---gatttccagtgaacgcagcgagacaccaaaattga tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta ctyaycccayccaccctycttyytycatyyyyccaycyyytyycctcctcottccagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg 111; 21; Length 1270; 290; Indels Score 362; DB 2. Pred. No. 3e-89; ); Mismatches 2 ; 0 28.5%; 66.0%; Conservative Local Similarity es 777; Conserv Query Match Best Local S Matches 777 56 98 490 323 203 263 434 499 611 g d à g g g 合 qq qq ò ò ò ò ð ŏ ò

24-MAR-2000; 2000WO-US08020

06-APR-1999;

WO200062736-A2

26-OCT-2000

(UYEC-) UNIV EAST CAROLINA.

Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis; 965 ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt 1024 Human low adenosine antisense oligonucleotide related sequence #2899 725 agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc cacttcacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta 905 gtggctggctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag 665 agggccctgagctcggtggacccaggggatgacatgtccctacacccctcccctgccctag -------tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta ------gcttggagctgggggcccagtgactcgggtttaga--------cagatatgtgtgggagggg 1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108 1145 aa-----atattaaatatgttagcaaagagttaata 1175 agcaaagtgcagcattacagtggagg-F21332 standard; DNA; 1282 14-MAR-2001 (first entry) Homo sapiens cancer; 785 11 845 029 726 819 876 911 RESULT F21332 qq ò 셤 ò g δy g g ò g ò g QΥ g οy qq δy

ggtggcccagtttgtaaaggacctgctcttacatttaaagaaacttttcgcgagggacg

386

```
conjugation the state of the state of the state of alternative base.

(I) can have respiratory, bronhodilator, antiliflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonacleotides and (I) can be used to down-regulate the expression and or activity of terget polypeptides associated with ung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adenosine molecules and their receptors, cytokine and chemokine receptors, adenosine molecules and their receptors, central nervous system (CNS) and peripheral nervous and non-nervous system peptide transmitters, defensine, growth factors, vasociated proteins. The creceptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders and confirming respiratory obstruction (especially pulmonary obstruction and/or bronchoconstriction) and/or lung inflammation, allergy (ies) and/or surfactant hypoproduction which are associated with a disease or condition selected from pulmonary vasoconstriction, inflammation, allergies, pain, cystic fibrosis (CF), allergies syndrome (RDS), pain, cystic city contains contains and contains contai
                                                                                                                                                                                                                                                                                                                                                                                            oligonucleotides and compositions (I) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fragments
                                                                                                                                                                                 trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypertension, emphysema, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F213A represent human polynucleotide fragmen and antisense oligonucleotides used in the exemplification of the
                                                                                                                                        adenosine (A) content antisense oligonucleotides which do not
                                                                                                                                                                                                                                                                                                                                                               present invention describes low adenosine (A)
                                                                                                                                                                                                                                                                                 Disclosure; Page 1333-1334; 1592pp; English.
                                                                  2000-679539/66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   present invention.
   Nyce JW;
                                                                                                                                                Š
```

13; 205 262 322 325 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 439 Gaps ceteaatectetectgttggcactgggceteatggegettttgttgaecaeggteattge 85 cccgcacaaggtctcagctgggcagttttccagcttgcatgtccgagacaccaaaatcga cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg ctctcaaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg ggageteattgaggagetggteaacateacecagaate---aggeateectetgeaacgg cageatggtgtggagegteaacetgacegeeggeatgtactgegeagetetagaatetet Score 362; DB 21; Length 1282; Pred. No. 3e-89; 0; Mismatches 290; Indels 111; 28.5%; Conservative Best Local Similarity Matches 777; Conserv : 111 Query Match 56 98 146 146 203 263 997 323 380 qq ò οg QQ ογ q ò q Qγ ò

cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.

```
cctgggggcc-----gacacaggggacaggagaaaagggtcagagatgctgctctt 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antiallergic; antiasthmatic; cytostatic; 'analgesic; impaired airway; lung disease; ischaemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
                               501
                                                            553
                                                                                          561
                                                                                                                        610
                                                                                                                                                    620
                                                                                                                                                                                   699
                                                                                                                                                                                                               919
                                                                                                                                                                                                                                               725
                                                                                                                                                                                                                                                                         736
                                                                                                                                                                                                                                                                                                        771
                                                                                                                                                                                                                                                                                                                                      796
                                                                                                                                                                                                                                                                                                                                                                    818
                                                                                                                                                                                                                                                                                                                                                                                                856
                                                                                                                                                                                                                                                                                                                                                                                                                                                           916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            phosphorothioate; impaired respiration; inflammation; allergy; allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                adenosine receptor; low adenosine antisense oligonucleotide;
                                                                                                                                    737 agcacactgtagcattacagtgggtgccccccttgccagacatgtggtgggacagggacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                          tttattattgtgtgttatttaaatgagtgtgtttgtcaccgttgggggattggggaagact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                 ---agoogacotcagcottccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                                                                                                                                                             ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                         677 agggccctgagctcggtggacccagggatgacatgtccctacaccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                    ------tettgetgtacetgggagtggcacagacatgttettettageetta
                                                                                                                                                                                                                                                                                                                                                                                                 cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------gcttggagctgggggccagtgactcgggtttaga-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cctgggggcctcggaggccgagggagggagagaggggaaaagccgctcct
                                                            agttccagattcattttttttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                   ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human adenosine receptor related polynucleotide 2nd SEQ ID NO:84.
                                                                                                                                                                                                                                                                                                                                                                                                                            tttattattytytyttatttáaacaaytytcttytttytytytyggggacagygayty-
                                                                                                                                                                                                                                                                                                        agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP
                                                                                                                                                                                                                                                                                                                        A35210 standard; DNA; 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                              819
                                                                                                                                                                                                                                                                                                                                                                                                                                                          857
440
                               446
                                                                                                                                                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             962
                                                            499
                                                                                                                      554
                                                                                                                                                                                  611
                                                                                                                                                                                                              621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A35210
                                                                                       g
                                                                                                                                               q
                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                           ŏ
                                                                                                                      ò
                                                                                                                                                                                οy
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
```

Sequence 1282 BP; 293 A; 341 C; 337 G; 311 T; 0 other,

```
QQ
                                                                                                                         qq
                                                                                                                                                                        ŏ
                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΟŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>B</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention describes a new composition comprising an antisense oligonucleotide (ON) with low adenosine (up to 15%), which targets outcled acids involved in bronchoconstriction, allergies, and/or inflammation. The ON can have antiinflammatry, antiallactic, antialized; and analogasic activities. The compositions are useful for the treatment of diseases associated with inflammation, impaired airways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma, impedder respiratory inespiratory distress syndrome, pain, cystic fibrosis, pulmonary disease (COPD), and cancers such as leukaemias, lymphomas, carcinomas, and cancers such as leukaemias, lymphomas, carcinomas, and cancer: The reduction of the adenosine content of the consest and prostate cancer. The reduction of the adenosine receptors causing bronchoconstriction and inflammation. A3213 to A3512 represent the conclected sequences given in the sequence listing from the present invention, which correspond to SEO ID NO:1 to 2815, and then the last affect from the present the sequences are also called SEO ID NO:1 to 2815, and then the last affect from the present and process are also called SEO ID NO:1 to 2815, and then the last affect from the present and process and antial and analogas and antial and antial and antial and antial and antial and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       differ from the previously named sequences. SEQ ID NO:11 to 1680 (A32323 to A33923 are specifically claimed ONS from the present invention. N.B. Sequences given in the disclosure of the present invention do not match up with their corresponding SEQ ID NO: sequences given in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26 cctcaatcctctctgttggcactgggcctcatggcgcttttgttgaccacggtcattgc 85
                                                                                                                                                                                                                                                                                                                                                                  New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 3e-89;
0; Mismatches 290; Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 21; Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1282 BP; 293 A; 341 C; 337 G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 362; DB 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 1249-1250; 1343pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.5%;
66.0%;
                                                                                                                                                 99WO-US17712
                                                                                                                                                                                          98US-0095212
                                                                                                                                                                                                                                    (UYEC-) UNIV EAST CAROLINA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 66.0
Matches 777; Conservative
                                                                                                                                                                                                                                                                                                                       WPI; 2000-205971/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence listing
                                                            WO200009525-A2
                    Homo sapiens
                                                                                                                                               03-AUG-1999;
                                                                                                                                                                                          03-AUG-1998;
                                                                                                       24-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
                                                                                                                                                                                                                                                                               Nyce JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                       cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

į.

86 86 146 146 203

09 09 09 09

ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg

ggagctcattgaggagctggtcaacatcacccagaaccagaaggctccgctctgcaatgg

```
1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  610
                                                                                                                                                                                          498
                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                        561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cctgggggcctcggagcctcatccgaggcagggtcaggagagggggaacagccgctcct
gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                      ttaggggggggggaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                                                     ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtccctcctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---tettgetgtacetgggagtggcacagacatgttettettageetta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           797 cacttcacacacaggcaactgaggcagacagcagctcaggcacacttcttcttggtctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        917 gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtctgccactcagcagctggccctcagccaagcagtaatttattgttttccttgtattt
                                gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                              ctctcaaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                             agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                           386 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaactttttcgcgagggacg
                                                                                                                                                                                          tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                       agttccagattcatttttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                    ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----atattaaatatgttagcaaagagttaata 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q56692 standard; cDNA; 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-SEP-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _ =
aa -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
Q56692
ID Q56692
XX
AC Q56692;
AX
DT 14-SEP-
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q56692;
                                                                                                                                                                                                                                                                                                                                                                                    611
                             266
                                                                                            326
                                                                                                                           380
                                                                                                                                                                                        440
                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                                                                                                                                                                                                                                                                                                                670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
```

```
cctggggcc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
             380
                                                                         434
                                                                                             499
                                                                                                                061
                                                                                                                                                                                                 609
                                                                                                                                                                                                                     670
                                                                                                                                                                                                                                                                                 725
                                                                                                                                                                                                                                                                                                     772
                                                                                                                                                                                                                                                                                                                                              819
                                                                                                                                                                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                                                                                                                                                                          905
                                                                                                                                                                                                                                                                                                                                                                                                                                                  965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F21333
                                                     ŏ
                                                                        g
                                                                                             Qγ
                                                                                                                                    δ
                                                                                                                                                        Op
                                                                                                                                                                              ò
                                                                                                                                                                                                qq
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                              QΫ́
                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cetegetectgeattggetetgggeteeatggegetetggttgactgtggteattge 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cotcaatcotototottggcactgggcctcatggcgcttttgttgaccacggtcattgc 73
                                                                                                                                                                                                                                                                                                                                                             An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggageteattgaggagetggteaacateacceagaaccagaaggeteegetetgeaatgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 111;
                                                                                                                                                                                                                                                                                                              - obtd. using
                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 362; DB 15; Length 1290;
Pred. No. 3e-89;
0; Mismatches 290; Indels 111
                    interleukin-13; lymphokine; immunological disorder; therapy;
                                                                                                                                                                                                                                        Cooks BG
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1290 BP; 308 A; 335 C; 336 G; 311 T; 0 other;
                                                                                                                                                                                                                                      Banchereau J, Briere F, Coffman RL, C
, Dang W, De Vries J, De Waal Malefyt
M, Heath A, Mckenzie A, Punnonen J, ·2
                                                                                                                                                                                                                                                                                                           Purified interleukin-13 proteins and antibodies mouse gene encoding related protein P600
 Sequence encoding human interleukin-13 (IL-13)
                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 126-127; 135pp; English.
                                                                        Location/Qualifiers
                                                                                                                                                                         92US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 28.5%;
Best Local Similarity 66.0%;
Matches 777; Conservative (
                                                                                                                                                       93WO-US07645.
                                                                                            ø
                                                                                                                                                                                                                                                Culpepper, Dang W, D
Doherty TM, Heath A,
                                                                                            /*tag=
                                                                                                                                                                                                                  (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                              1994-083197/10.
                                                                                                                                                                                                                                                                                         P-PSDB; R48624.
                              diagnostic; ss
                                                    Homo sapiens
                                                                                                                                                      18-AUG-1993;
                                                                                                                                                                                    29-JAN-1993;
01-FEB-1993;
                                                                                                              WO9404680-A.
                                                                                                                                                                          21-AUG-1992;
                                                                                                                                                                                                                                       Aversa G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 314
                                                                       Key
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
1085 gictgccagccagcagccagctctcagccaacgagtaatttattgttttcctcgtattt 1144
                                                                                                                                                     489
                                                                                                                                                                                                                                                                                                                 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             910
                                                                                                   498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antiinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human low adenosine antisense oligonucleotide related sequence #2900
                                     ggtggcccagtttgtaaaggacctgctctacatttaaagaaacttttcgcgagggacg
                                                                                                                           ----agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----tycacttcatcaacyctgagggaaagcactgcatcccatgactgtcccctccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  785 cacticacacacaggcaacigaggcagacagcicaggcacacticititiggicita
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---gacacaggggacaggagagaggtcagagatgctgctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gtctgccactcagcagctggcctcagccaagcagtaatttattgtttttccttgtattt
agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                440 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                 ttagggaggggtaaaattccttagcttagacctcagcctgtgctgccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                                                                 ctgagcccagccaccctgccttggtgcatggggcccagccgggtggcctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----

    tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cctgggggcctcggaggcctcatccgaggcagggtcaggagagggggagaacagccgctcct
                                                                                                                                                                                                        agttccagattcattttttttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----gcttggagctgggggcccagtgactcgggtttaga-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aa----atattaaatatgttagcaaagagttaata 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F21333 standard; DNA; 6952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
```

surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension; emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis; Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -Disclosure; Page 1334-1335; 1592pp; English. 24-MAR-2000; 2000WO-US08020 EAST CAROLINA. WPI; 2000-679539/66 (UYEC-) UNIV EAST WO200062736-A2 Homo sapiens 06-APR-1999; 26-0CT-2000 cancer; 

The present invention describes low adenosine (A) content antisense oligonuclectides and compositions (I) comprising them. In the antisense oligonuclectides the A is replaced by a 'universal' or alternative base. (I) can have respiratory, bronchodiator, antiinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonuclectides and (I) can be used to down-regulate the expression and or activity of target polypeptides associated with a lung/respiratory disorders and malignancies, such as stimulating and activity of target polypeptides associated with a numonoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, immunoglobulins and antibodies and their receptors, cytokine and chemokine receptors, adenosine receptors, bradykinin receptors, central nervous system (CNS) and peripheral nervous and non-nervous system peptide transmitters, defensins, growth factors, vasoactive peptides and receptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction (especially pulmonary obstruction and/or bronchoconstriction) and/or lung inflammation, allergy(les) and of the antisense or contrains the antisense or contrains the antisense or contrains and malignance and contrains and antisense or contrains and contrains and contrains and contrains and contrains and antisense or contrains and condition selected from pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragments and antisense oligonucleotides used in the exemplification of the present invention

Sequence 6952 BP; 1536 A; 2017 C; 1919 G; 1480 T; 0 other;

teteacetgeeteggtggeettgeeteecegageeetgtgaeteeeteeceaeceteaa 145 cetegetectectgeattggetetgggetecatggegetetggttgaetgtggteattge Ouery Match 28.5%; Score 362; DB 21; Length 6952; Best Local Similarity 66.0%; Pred. No. 7.5e-89; Matches 777; Conservative 0; Mismatches 290; Indels 111 5756 56 98 οp ò ò

6827

g

6115 6346 6406 6466 439 610 699 725 818 322 379 gtggctgctggcacttggagccaagggttcagagctcagggccccagcactaaagcagt --gagtccctgggaataagcactgtgtgtaaaaattctgctacctcactgggat ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt cctgggggcc-----gacacaggggacaggagaaagggtcagagatgctgcttt cctgggggcctcggagcctcatccgagggagggtcaggagagggggagaacagccgctcct agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta ----agecgaecteagecttececttgeceagggeteagectggtgggeetectetgtee agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg---ggageteattgaggagetggteaacateaceeagaate---aggeatectgeaacgg cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg ctctcaaaagcccgcggcagg---gatttccagtgaacgcaggccgagacaccaaaattga gttcaactgaaacttcgaa----agcatcattatttgcagagacaggacctgactattga ctgagcccagccaccctgccttggtgcatggggcccagccgggtggccctcctccgtc. ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctcag 6407 agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc -----tottgctgtacctgggagtggcacagacatgttcttcttagcctta -------gottggagctgggggcccagtgactcgggtttaga------ggageteattgaggagetggteaacateacecagaaceagaaggeteegetetgeaatgg agttccagattcatttttttttccgacgtcacaaatttcttagggaggtggggg---aa-----atattaaatatgttagcaaagagttaata 6857 aaagttaagaaataaaatatgttatcaaagagttaata 1108 440 772 6467 2019 1011 1919 1071 6172 6527 380 6116 499 6291 726 918 6587 6647 146 5816 203 5876 263 5936 323 5996 119 670 911 Op Qγ Db δy g Ω Ω δý g οy QQ Ωý QQ δý QQ ōλ QQ δ Db δ Dβ QΥ qq QΥ g ŏ g ŏ В à qq δy qq ò

No.

Pred.

66.0%;

Best Local Similarity

```
phosphorothicate; impaired respiration; inflammation; allergy; allergic disease; bronchoconstriction; inhibitor; antiinflammatory; antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway; lung disease; ischaemic condition; pulmonary vasoconstriction; asthma; respiratory distress syndrome; pain; cystic fibrosis; emphysema; pulmonary hypertension; chronic obstructive pulmonary disease; COPD; cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
                                                                                                          receptor; low adenosine antisense oligonucleotide;
                                                                                                                                                                                                                                                                                                                                                                                     New antisense oligonucleotides useful for treating e.g. pulmonary vasoconstriction, inflammation, allergies, asthma, hypertension, bronchitis, emphysema, respiratory distress syndrome, ischemia or
                                                                                      Human adenosine receptor related polynucleotide 2nd SEQ ID NO:85.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 1250-1251; 1343pp; English.
                      BP.
                                                                                                                                                                                                                                                                                                98US-0095212.
                                                                                                                                                                                                                                                                           99WO-US17712
                                                                                                                                                                                                                                                                                                                      EAST CAROLINA.
                    A35211 standard; DNA; 6952
                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-205971/18
                                                                                                           Human; adenosine
                                                                                                                                                                                                                              WO200009525-A2
                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                    (UYEC-) UNIV
                                                                                                                                                                                                                                                                           03-AUG-1999;
                                                                                                                                                                                                                                                                                                03-AUG-1998;
                                                                28-JUL-2000
                                                                                                                                                                                                                                                     24 - FEB - 2000
                                                                                                                                                                                                                                                                                                                                           Nyce JW;
                                           A35211;
15
RESULT
          A35211
```

The present invention describes a new composition comprising an antisense oligonucleotide (ON) with low adenosine (up to 15%), which targets nucleic acids involved in bronchoconstriction, allergies, and/or anticlestination. The ON can have antiinflammatory, antiallergic, anticlasthmatic, cytostatic and analgesic activities. The compositions are useful for the treatment of diseases associated with inflammation, impaired airways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. They can be used for treating e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma, impeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), and cancers such as leukaemias, lymphomas, carcinomas, and cancers which may metastasise to the lungs, including construction and prostate cancer. The reduction of the adenosine content of the construction and inflammation, A3213 represent the construction of the construction and inflammation, and assistance adenosine receptors causing construction and inflammation, and as the construction of the construction of the construction and inflammation. A3213 represent the nucleotide sequences given in the sequence listing from the present invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185 sequences are also called SEQ ID NO:1 to 185, but the sequences differ from the previously named sequences. SEQ ID NO:11 to 1680 (A32323 to A33992) are specifically claimed ONS from the present invention. N.B. Sequences given in the disclosure of the present invention do not match up with their corresponding SEQ ID NO: sequences given in the 6952 BP; 1536 A; 2017 C; 1919 G; 1480 T; 0 other; sequence listing

DB 21; Length 6952; Score 362; 28.5%;

Sequence

Query Match

```
13;
                                                                                                                                                                                            5875
                                                                                                                                                                                                                                                                                                                    5995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6231
                                                            6115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cctggggcc----gacacaggggacaggagaaagggtcagagatgctgctctt 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            910
                                                                                                      teteacetgeeteggtggeettgeetecegageeetgtgaeteeeteeceaaceteaa 145
                                                                                                                                                                                                                                                                                                                                                 379
                                                                                                                                                                                                                                                                                                                                                                                                            439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            771
               Gaps
                                           85
                                           cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc
                                                                                                                                    ggagctcattgaggagctggtcaacatcaccagaatc---aggcatccctctgcaacgg
                                                                                                                                                                                               ggagctcattgaggagctggtcaacatcacccagaaccagaaggctccgctctgcaatgg
                                                                                                                                                                                                                             cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                          cagcatggtatggagcatcaacctgacagctggcatgtactgtgcagccctggaatccct
                                                                                                                                                                                                                                                                                                   cccgcacaaggtctcagctgggcagttttccagcttgcatgtccgagacaccaaaatcga
                                                                                                                                                                                                                                                                                                                                                                                                                                       6056 ggtggcccagtttgtaaaggacctgctcttacatttaaagaaactttttcgcgagggacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttagggagggggaaattccttagcttagacctcagcctgtgctgcccgtcttcagcct-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----agccgacctcagccttccccttgcccagggctcagcctggtgggcctcctgtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcaaagtgcagcattacagtggagg-----cagatatgtgggaggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tttattattgtgtgttatttaaacaagtgtcttgtttgtgtggggacagggagtg---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5527 tttattattgtgtgttatttaaatgagtgtgtttgtcaccgttgggggattggggaagact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5587 gtggctgctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggt
                                                                                                                                                                                                                                                                                        gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                   ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                              agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tttcagatgaagcatgaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agttccagattcattttctttccgacgtcacaaatttcttagggaggtgggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6347 agggccctgagctcggtggacccagggatgacatgtccctacacccctcccctgccctag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6407 agcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ------tottgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----gcttggagctggggcccagtgactcgggtttaga----gcttggagctggggtgactcggggtttaga----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgagcccagccacccttgcttggtgcatggggcccagccgggtggccctcctccgtc-
              Indels
7.5e-89;
ches 290;
            Mismatches
                                                                                                                                                                                                                                                                                                                                                                 =
=
=
-
              ö
               Conservative
                                                                                                                                                                                                                                                                                                                  5936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    611
                                                                       9699
                                                                                                                                 5756
                                                                                                                                                                                                                                                                                                                                                                             9669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6647
            Matches
                                                                                                      86
                                                                                                                                                                146
                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                         5876
                                                                                                                                                                                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                323
                                                                                                                                                                                                                                                                                                                                                                                                           380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               962
                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                    g
                                                                                                      ŏ
                                                                                                                                 g
                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         òχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
6707 cctggggcctcgggagcctcatccgagggagggtcaggaggagggggagaacagccgctcct 6766
```

| _   |   |      |
|---|---|------|
| 2   |   |      |
| 0   |   |      |
| _   |   |      |
| u   | _ |      |
| ۲   | = |      |
| ď   | = |      |
| Ίt  | = |      |
| ŭ   |   |      |
| 'n  | = |      |
| ŏ   | _ |      |
| ۲   | Ξ |      |
| ₽   | = |      |
| 4   | = |      |
| 9   | _ |      |
| ٢   | = |      |
| ā   | _ |      |
| ٢   | Ξ |      |
| 7   | _ |      |
| ಜ್ಞ   | _ |      |
| ŭ   | _ |      |
| 5   | = |      |
| ö   |   |      |
| ğ   | _ |      |
| ä   | _ |      |
| ပ္ပ   | = |      |
| ŏ   | _ |      |
| ď   | = |      |
| ŭ   | _ |      |
| ပ္ပ   | _ |      |
| ŏ   | _ |      |
| 39  | _ |      |
| ŭ   |   |      |
| ĕ   | = |      |
| ă   | _ |      |
| ĕ   | _ |      |
| ă   | _ |      |
| S   | _ |      |
| ö   |   |      |
| g   | = |      |
| ŭ   | _ |      |
| g   | _ |      |
| ō   | _ |      |
| ĭ   | = |      |
| ٠,  |   |      |
| 1011 greigecacteageageiggeceicagecaageagiaaittaitgiitteetigiaiti 1070 |   | 1111 |
| $\vec{\circ}$   |   | i    |
| _   |   | 1    |
|   |   |      |

ò

Search completed: May 13, 2001, 14:30:23 Job time: 18338 sec

<sup>6767</sup> gictgccagccagcagccagctctcagccaacgagtaatttattgttttcctcgtattt 6826 셤

ογ

Appl Appli

Sequence

Sequence

Sequence Sequence Sequence Sequence Sequence Sequence Sequence

Sequence

Sequence Sequence Sequence Sequence

```
COMPUTER REAGABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM PC compatible
COMPUTER: TBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB.1993
CLASSIFICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATFORNEY/AGENT INPOMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATFORNEY/AGENT INPOMBERTON:
NAME: CATING, Edwin P.
REGISTRATION NUMBER: 34,090
                           US-08-814-052-18
US-08-99-218A-1
US-08-99-218A-1
US-08-906-037-26
US-09-083-485-1
US-09-005-397-26
US-08-909-965C-11
US-08-909-965C-11
US-08-908-978-1
US-08-908-978-1
                                                                                                                                                                                                  PCT-US92-02320A-1
US-08-892-747-13
                                                                                                                                                                                                                                US-09-128-450-27
US-08-496-855A-3
PCT-US91-02311-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         de Vries, Jan
Zurawski, Gerard
/ENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: DNAX Research Institute
901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                    Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/08012543
Patent No. 5596072
GENERAL INFORMATION:
APPLICANT: Culpepper, Janice
APPLICANT: McKenzie, Andrew
APPLICANT: Dang, Warren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aversa, Gregorio
Briere, Francine
Banchereau, Jacques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: DITELECOMUNICATION TECHNOME: 415-852-9196
TELEPRAN: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
22249
2249
2249
33180
33180
33183
33183
33183
33183
33036
33036
33036
3311
1322
1322
1521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Palo Alto
                              448888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: Ca
                                                                                                                                                                                                                                                                                                                                                                      US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
 CITY:
May 13, 2001, 14:21:21 ; Search time 226.02 Seconds (without alignments) 980.315 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
Appli
, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         App]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                Sequence 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seguence 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 14,
Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 58,
Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4,
Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US93-07645A-1
PCT-US93-07645-1
US-08-371-07645-1
US-08-012-543-3
PCT-US93-07645A-3
PCT-US93-07645A-3
US-08-371-121-17
US-08-371-469-4
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-594-469-1

US-08-906-957-1

US-08-371-121-24

US-08-371-121-26

US-08-371-121-10

US-08-371-121-10
                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-975-316-58
US-07-915-934-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-012-543-1
                                                                                                                                                                                                                                                                         302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       - nucleic search, using sw model
                                                                                                                                                                                                                           IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                US-09-451-527-99
1269
                                                                                                                                                                                                                                                                                                                                    seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7218
1576
740
740
741
972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2360.4
22166.4
22166.4
22166.4
256.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
266.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                       OM nucleic
                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
```

```
--gacacaggggacaggagagagggtcagagatgctgctctt
                                                                              1025 ceregegeeregascerearecasegeasegereasasasasasasaseseerer
                                                                                                                                                              Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 170A
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                           Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: Macintosh 6.0. SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                        Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 28.5%;
Best Local Similarity 66.0%;
Matches 777; Conservative
                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA: APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY: linear
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                       cctggggcc-
                                                                                                                                                                                                                                 RESULT 2
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                        COMPUTER:
                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                               1071
                                                                                                                                                                                          1145
                                                      962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     203
  911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                          g
                                                     ŏ
                                                                              g
                                                                                                          ŏ
                                                                                                                                  q
                                                                                                                                                              ò
                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                               13;
                                                                                                                                                                                                                                 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                          gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg 322
                                                                                                                                                                                                                                                                                                                                                                   GATCAACGTGTCAGGCTGCAGTGCCATCGAGAGACCCAGAGGATGCTGAGTGTTGTG 313
                                                                                                                                                                                                                                                                                                                                                                                               ctetcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga 379
                                                                                                                                                                                                                                                                                                                                                                                                            380 agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            844
                                                                                                                                                                                                     665 AGGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG 724
                                                                                                                     cotogotoctoctgoattggototggggtocatggcgttcggttgaotgtggtcattgc 85
                                                                                                                                                14 cercaarcererefregeaeressecrearssecriffreareaceaestrarec 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctyagcccagccaccctgccttggtgcatggggcccagccgggtggcctcctccgtc----AGCCGACCTCCAGCCTTCCCCTTGCCCAGGCTCAGCCTGGCGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGCCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              845 TTTATTATTGTGTGTTATTTAAATGAGTGTGTTTGTCACCGTTGGGGATTGGGGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agttccagattcatttttctttccgacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTTGCAGATTCATTTTTTTTTTTTCTGATGTCAAAAATGTCTTGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcaaagtgcagcattacagtggagg-----cagatatgtgggaggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                            290; Indels 111;
                                                                    Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------gcttggagctgggggcccagtgactcgggtttaga
                                                                 Score 362; DB 1;
Pred. No. 2.1e-98;
0; Mismatches 290
                                                                   28.5%;
66.0%;
                                                                                             Conservative
 CDS
45..443
                                                                 Query Match
Best Local Similarity
Matches 777; Conserv
; NAME/KEY:
; LOCATION:
US-08-012-543-1
                                                                                                                                                                            98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               772
                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                              323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            726
                                                                                                                                              g
                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                          å
                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

13; 73 ggagctcattgaggagctggtcaacatcacccagaatc---aggcatcctctgcaacgg cagcatggtgtgtggaggtcaacctgaccgccggcatgtactgcgcagctctagaatctct gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg Mismatches 290; Indels 111; Score 362; DB 5; Pred. No. 2.1e-98;

```
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          965 GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt 1010
                                                                   agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa 439
                                                                                                              tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta 498
                                                                                                                                 GTTCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACACGACCTGACTATTGA 489
                                                                                                                                                             553
                                                                                                                                                                                                          610
                                                                                                                                                                                                                                                       699
                                                                                                                                                                                                                                                                                                    725
                                                                                                                                                                                                                                                                             664
                                                                                                                                                                                                                                                                                                                                                771
                                                                                                                                                                                                                                                                                                                                                                                                                                         875
                                                                                                                                                                                                                                                                                                                        AGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG 724
                                                                                                                                                                                                                                                                                                                                                                     784
                                                                                                                                                                                                       -----gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
GATCAACGTGTCAGGCTGCAGTGCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTG
                                  ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGCTCAGCCTGGTGGGCCTCCTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                           CACTTCACACACACCAACTGAGGCAGACAGCAGCTCAGGCACATTACTTGGTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                       ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                       374 GGTGGCCCAGTTTGTAAAGGACCTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACG
                                                                                                                                                           AGTTGCAGATTCATTTTTCTTTTCTGATGTCAAAAATGTCTTGGGTAGGCGGGAAGGAGGG
                                                                                                                                                                                                                                                     -------tcttgctgtacctgggagtggcacagacatgttcttcttagcctta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------gcttggagctgggggcccagtgactcgggtttaga--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1025 CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGGGGGGCAGAACAGCCGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1071
                                                                                                               140
                                                                                                                                    434
                                                                                                                                                                                                                              550
                                                                                                                                                                                                                                                                                                                                                                                                                785
                                                                                                                                                                                                                                                                                                                                                                                                                                                            845
                                                                  380
                                                                                                                                                            499
                                                                                                                                                                                 490
                                                                                                                                                                                                        554
                                                                                                                                                                                                                                                     611
                                                                                                                                                                                                                                                                                                  670
                                                                                                                                                                                                                                                                                                                                               726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             962
                                                                  ò
                                                                                      pp
                                                                                                                              g
                                                                                                                                                           ò
                                                                                                                                                                                g
                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
202
                                                                                                                                                                                                                                                                                                                                                                                                                  193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             380 agigatccagitggigaaaaaccigcicacciatgiaaggggagittaicgccaiggaaa 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccttcag 725
                                                                                                                                                                                                                                                                                                                                                        434 GITCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ggageteattgaggagetggteaacateacecagaate---aggeateetetgeaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cagcatagtatagagcatcaacctgaccgccaggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ctctcaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctgagcccagccacccctgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----AGCCGACCTCAGCCTTCCCCTTGCCCAGGGCTCAGCCTGGTGGGCCTCTGTCC
                                                                                                                                                                                                                                                                                               Score 362; DB 5; Length 1290;
Pred. No. 2.1e-98;
0; Mismatches 290; Indels 111;
                         PRIOR AMPLICATION DATA:

APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
JMBER: PCT/US93/07645
19930818
                                                                                                                                                                                                                                                                                               28.5%;
66.0%;
                                                                                                                                                                                                                                                                                             Query Match 28.5
Best Local Similarity 66.0
Matches 777; Conservative
                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: double
 APPLICATION NUMBER:
                                                                                                                                                                                                                                       linear
                  FILING DATE:
                                                                                                                                                                                                                                       ; TOPOLOGY:
PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         554
```

13;

```
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                           FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: MINIT, Aditan
APPLICANT: KAGHAD, Mourad
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: Lansformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                           962 cctgggggcc----gacacaggggacaggagaaagggtcagagatgctgctctt 1010
                                                                                                                                                                                                                                                                                                                                                                                                                         1011 gtctgccactcagcagctggccctcagccaagcagtaatttattgtttttccttgtattt 1070
                                                                                                                                                                                                                                                                                                            965 GGACCCCAGGAGTCCCTGGTAATAAGTACTGTGTACAGAATTCTGCTACCTCACTGGGGT 1024
                                                                                                                                                                                                                                                                                                                                                                                          1025 CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGGGGGCGCAGAACAGCCGCTCCT 1084
                                                                                                                                                                                                                                                             964
                                                                                                                                                          665 AGGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG 724
                                                  --tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                              785 CACTICACACACAGGCAACTGAGGCAGACAGCAGCTCAGGCACACTTCTTGGTCTTA
                                                                                                                                                                                                                                            905 GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGACTCAGGGCCCCAGCACTAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                            1085 GTCTGCCAGCCAGCAGCTCTCAGCCAACGAGTAATTATTATTGTTTTCCTCGTATTT
                               726 agcaaagtgcagcattacagtggagg-----cagatatgtgtgggaggggg---
                                                                                                                                                                                                                            876 -----gettggagctgggggcccagtgactcgggtttaga----gettggagctggggtttagga-----
                                                                                                                                                                                                                                                                                           91.1 .....gagtccctgggaataagcactgtgtgtaaaattctgctacctcactgggat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JMBER: PCT/FR92/00280
27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 07/938,161 FILING DATE: 30-NOV-1992 PRIOR APPLICATION DATA: APPLICATION NUMBER: PCT/FR92/0028-FILING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 15, Application US/08371121 Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington, D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
g
                                                                                                                          QQ
                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                               ò
                                                                                               ò
                                                                                                                                                            ò
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGGCCCAGTITGTAAAGGACCTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 cctcgctcctcctgcattggctctgggctccatggcgctctggttgactgtggtcattgc 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ggagctcattgaggagctggtcaacatcacccagaatc---aggcatccctctgcaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26 CCTCAATCCTCTCTCTGTTGGCACTGGCCTCTTTTGTTGTTGACCACGGTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         446 GTTCAACTGAAACTTCGAA----AGCATCATTATTTGCAGAGACAGGACCTGACTATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCAACGTGTCAGGCTGCAGTGCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctctcaaaaagcccgcggcagg---gatttccagtgaacgcagccgagacaccaaaattga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agttccagattcatttttttttcqqacgtcacaaatttcttagggaggtggggg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    440 tttcagatgaagcatgaaaacttagcatccttatctgtagaccca-gacctgaccactta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 360.4; DB 1;
Pred. No. 6.2e-98;
0; Mismatches 291;
                                                                                                                                                   16781/383
FR 91 00137
                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                            NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665 REFERENCE/DOCKET NUMBER: 16. TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                      TELEX: 904136
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28.4%;
65.9%;
                                                                                                                                                                                       TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
             08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 65.9
Matches 776; Conservative
                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: single
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                     15..452
                                                                                                                                                                                                                                                                                                                                        linear
                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; LOCATION:
US-08-371-121-15
                                                                                                                                                                                                        TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
```

13;

```
Query Match 17.1%;
Best Local Similarity 57.2%;
Matches 719; Conservative
                                                                                                                                                   INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS:
01-FEB-1993
                                                                                                                                                                            LENGTH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                      70..465
                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                          CDS
FILING DATE:
                                                                                                                                                                                                                                                        ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                       cctggggcc-----gacacaggggacaggagaaagggtcagagatgctgctctt 1010
                                                                                                                                                                                                                                                                                                                                                                                              CCTGGGGCCTCGGAGCCTCATCCGAGGCAGGGTCAGGAGGGGGCAGAACAGCCGCTCCT 1096
                                                                                                                                                                                                               725
                                                                                     736
                                                                                                              771
                                                                                                                                       796
                                   676
                                                                                                                        ----tgcacttcatcaacgctgagggaaagcactgcatcccatgactgtcccctcctcag
                                                                                                                                                                            797 CACTICACACACAGGAACIGAGGCAGACAGCAGCTCCAGGCACACTTCTTGTCTTA
                                                                                   677 AGGCCCTGAGCTCGGTGGACCCAGGGATGACATGTCCCTACACCCCTCCCCTGCCCTAG
                                                                                                             agcaaagtgcagcattacagtggagg-----cagatatgtgtgggagggg----
                                                                                                                                                                 ---tcttgctgtacctgggagtggcacagacatgtttcttcttagcctta
                                                                                                                                                                                                                                                                                           917 GTGGCTGCTGGCACTTGGAGCCAAGGGTTCAGAGCTCAGGGCCCCAGCACTAAAGCAGT
         611 ctgagcccagccatgccttggtgcatggggcccagccgggtggccctcctccgtc-
                                                                                                                                                                                                                                                                    ----gcttggagctggggcccagtgactcgggtttaga---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 94304-1104

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071 aaagttaagaaataaaatatgttatcaaagagttaata 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Banchereau, Jacques
APPLICANT: de Vries, Jan
APPLICANT: Zurawski, Gerard
TILE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3, Application US/08012543
Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Culpepper, Janice
McKenzie, Andrew
Dang, Warren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT
                                                           029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1157
                                  621
                                                                                                                                                                                                                                                                                                                                                                                              1037
                                                                                                                                                                                                                                                                                                                                                                                                                       1011
                                                                                                                                                                                                                                                                                                                                                                                                                                               1097
                                                                                                            726
                                                                                                                                                              772
                                                                                                                                                                                                                                                                  876
                                                                                                                                                                                                                                                                                                                                                                       962
                                                                                                                                  Db
                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                           g
                                                           ò
                                                                                                            ò
                                                                                                                                                              à
                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTTGAGGAGGAAGGGAGATGCCTCAGC-----TTTGGCCTCAGCCTGCA 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        623 accoctgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttcatcaa 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35 tectgeattggetetgggeteeatggegetetggttgaetgtggteattgeteteaeetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cctcggtggccttgcctccccg-----agccctgtgactccctccccaaccct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     143 caaggagctcattgaggagctggtcaacatcacccagaatcaggcatccttgcaacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         168 TAAGGAGCTTATTGAGGAGCTGAGCAACATCACAAAGACCAGACTCCCCTGTGCAACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gatcaatgtctccgactgcagogccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288 GACCAACATCTCCAATTGCAATGCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       323 ctctcaaaagcccgcggcagggatttccagtgaacgcagccgagacaccaaaattgaagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           348 TAACCGCAAGGCCCCCACTACGGTCTCCA-----GCCTCCCCGATACCAAAATCGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              383 gatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   443 cagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaagtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          497 GTGGACTCATTTTCCTTTCTCAACATTGCT-----GGGGGGAGAGGCAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  402 AGCCCACTTTATAACAAAACTGCTCAGCTACAAAGCAACTGTTTCGCCACGGCCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 216.4; DB 1
Pred. No. 6.8e-55;
0; Mismatches 411
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
                                                                                                                                      DX0302K1
                                                                                               NAME: Ching, Edwin P. REGISTRATION NUMBER: 34,090
                                                                                                                                  REFERENCE/DOCKET NUMBER: D>
TELECOMMUNICATION INFORMATION
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
```

```
tcagcagctggcctcagccaagcagtaatttattgtttttccttgtatttaaagttaag 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggg-----ccgacacaggggacaggagaaaagggtcagagatgctgcttgtctgccac 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1108 GTGATGTGTAGTGAATG------GGGGGAGGGTGGTGGTGGTGTTGTCACTGAACAACTT 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                    993 GCAGCAACCAGCCCTCAGCCATGAAATAACTTATTGTT-----TTGTTCTTATATTAAA 1047
                                                                                                                                                                                                                                                                     965
                   1200 tttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaa 1255
cgctgagggaaagcactgcatccatgactgtcccctcctcagagcaaagtgcagta
                                                                 c....agtggaggcagatatgtgtgggagggggtcttgctgtacctgggagtggcacaga
                                                                                                                                                  813 ATCCCGGTGGGGACATGGTTTGCTGCCTATGCCCTGGGGGCTCCAGCATGAAGCAGTGG
                                                                                               694 CCGTGAGTCCAGCCTGTGGCCTGGTCCACACAGGGCAACTGAGGCAGCAGCAGCTTGAG
                                                                                                                                   933 AGGTCTCACCCCAGGCAGGAGTGGGAGGGGAGGCCAGAGCAACACTCCTGTCTGCCACG
                                                                                                                                                                                                   gctggggacagggagtggcttggagctgggggcccagtgactcgggtttaga-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARATERISTICS:
LENGTH: 1212 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01 FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                 859
                                                               743
                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                     996
                                649
                               q
                                                                                           Q
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                            ò
                                                                                                                               õ
                                                                                                                                                           Q
                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggg----ccgacacaggggacaggagaaagggtcagagatgctgcttgtctgccac 1019
                                                                                                                                                  262
                                                                                                                                                                    287
                                                                                                                                                                                       322
                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                                                                                  682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cgctgagggaaagcactgcatcccatgactgtcccctcctcagagcaaagtgcagcatta 742
                   Gaps
                                                                                                            cctcggtggccttgcctccccg-----agccctgtgactcccccaaccct
                                                                                                                                                                                      gatcaatgtotcogactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                      c---agtggaggcagatatgtgtgggagggggtcttgctgtacctggggagtggcacaga
                                                                                    288 GACCAACATCTCCAATTGCAATGCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTG
                                                                                                                                                                                                                           ctctcaaaaagcccgcggcagggatttccagtgaacgcagccgagacaccaaaattgaagt
                                                                                                                                                                                                                                                               gatccagttggtgaaaaacctgctcacctátgtaaggggagtttatcgccatggaaattt
                                                                                                                                                                                                                                                                                                                       -------CCATCCTGGGCATCTCAGCT
                                                                                                                                                                                                                                                                                                                                                                            551 GGGTTGAGGAGGAAGGGAGATGCCTCAGC------TTTGGCCTCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                 623 accoctgccttggtgcatggggcccagccgggtggccctcctccgtctgcacttcatcaa
                                                                                                                                                                                                                                                                                                                                                                                                                            gctggggacagggagtggcttggagctgggggcccagtgactcgggtttaga-----
                                    35 tectgeattggetetgggetecatggegetetggttgaetgtggteattgeteteaeetg
                                                                                                                                                                                                                                                                                                    cagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaagtt
                   Indels 126;
Length 1212;
DB 5;
                   0; Mismatches 411;
Score 216.4; DB 5
Pred. No. 6.8e-55;
                                                                                                                                                                                                                                                                                                                      462 CTAATGAGGAGAGA-------
17.18;
57.28;
         Best Local Similarity 57.2
Matches 719; Conservative
        Similarity
Query Match
                                                                                                                                                                    228 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                        95
                                                                                                                                                  203
                                                                                                                                                                                      263
                                                                                                                                                                                                                           323
                                                                                                                                                                                                                                                               383
                                                                                                                                                                                                                                                                                                    443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         911
                                     õ
                                                    g
                                                                        δ
                                                                                         g
                                                                                                            ò
                                                                                                                               q
                                                                                                                                                 ò
                                                                                                                                                                  g
                                                                                                                                                                                     ογ
                                                                                                                                                                                                       g
                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                          pp
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                   \tilde{Q}
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
443
                                                                                                                                                                     503
              323
                                                                                                                                                                                              497
                                                                                                                                                                                                                                                                                                  597
                                                                                                                                                                                                                                                                                                                                                    649
                                                                                                                                                                                           qq
                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                      g
                                                                                                                 Óλ
                                                                                                                                                                  ò
                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13;
tcagcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaag 1079
             1048 GTATTAAATAGCTTAGCAAAGAGTTAATAATATATGGAAGAATGGCCTGTTACACTCAAG 1107
                                                                                                   1108 GTGATGTGTAGTGAATG------GGGGGAGGGTGGTGGTGTTTGTCACTGAACAAACTT 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cctcggtggccttgcctccccg-----agccctgtgactccctcccaacct 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTGGTGGTCTCGCCGCCCCAGGGCCGGTGCCAAGATCTGTGTCTCTCCCCTCTGACCCT 167
                                                                                                                                                     1200 tttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaaa 1255
                                                                                                                                                                     aaataaaatatgttatcaaagagttaataatatatagaagagtagcctaaaaggctgcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 216.4; DB 5;
Pred. No. 6.8e-55;
0; Mismatches 411;
                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: APPLE Macintosh
OPERATING SYSTEM: Macintosh
OPERATING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MBER: US 07/933416
21-AUG-1992
                                                                                                                                                                                                                                              Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS: LENGTH: 1212 base pairs TYPE: nucleic acid STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17.1%;
llarity 57.2%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 719; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                 PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local $
1020
                                               1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288
                                                                                                                                                                               1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            263
ð
                                              ò
                                                                       qq
                                                                                                   ò
                                                                                                                          g
                                                                                                                                                     ò
                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
```

```
993 GCAGCAACCAGCCTCAGCCATGAAATAAATTGTT-----TTGTTCTTATATTTAAA 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1048 GTATTAAATAGCTTAGCAAAGAGTTAATAATATATAGGAAGAATGGCCTGTTACACTCAAG 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           742
                                                                                               442
                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                            622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     812
                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  623 accetgeettggtgeatggggeecageeggggggeetteeteegtetgeaetteateaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1200 tttcactgactttgtcaaactggaagccagaaataaagatggtgacaagagaaaa 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTTGAGGAGGAGATGCCTCAGC------TTTGCCCTCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        743 c...-agtggaggcagatatgtgtgggaggggtcttgctgtacctgggagtggcacaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      813 ATCCCGGTGGGACATGGTTTGCTGCCTATGCCCTGGGGGCTCCAGCATTGAAGCAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  933 AGGTCTCACCCCAGGCAGGAGATGGGAGGGGAGGCCAGAGCAACACTCCTGTCTGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080 aaataaaatatgttatcaaagagttaataatatagaagagtagcctaaaaggctgcat
                           TAACCGCAAGGCCCCCACTACGGTCTCCA-----GCCTCCCCGATACCAAAATCGAAGT
                                                                                             383 gatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgccatggaaattt
                                                                                                                                                                                               cagatgaagcatgaaaacttagcatccttatctgtagacccagacctgaccacttaagtt
                                                                                                                                                                                                                                               ------CCATCCCTGGGCATCTCAGCT
                                                                                                                                                                                                                                                                                            cyctgagggaaagcactgcatcccatgactgtcccctccagagcaaagtgcagcatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       catgittettettageettatttattattgtgtgttatttaaacaagtgtetttgtttgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   754 CACATITCTICTIGAICTIATITATIAGI-IGIGIGITATITAAAIGAGICIGICAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1020 tcagcagctggccctcagccaagcagtaatttattgtttttccttgtatttaaagttaag
ctctcaaaagcccgcggcaggatttccagtgaacgcagccgagacaccaaaattgaagt
                                                                                                                                          AGCCCACTTTATAACAAAACTGCTCAGCTACACAAAGCAACTGTTTCGCCACGGCCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      creccrecciaerecreaegercreaegeraegeaacacceceaecece-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gctggggacagggagtggcttggagctggggcccagtgactcgggtttaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 17, Application US/08371121 Patent No. 5652123 GENERAL INFORMATION:
                                                                                                                                                                                                                                          CTAATGAGGAGAGA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: CAPUT, Daniel APPLICANT: FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
US-08-371-121-17
```

```
periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                        196 ATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAG 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  108 gecteceegageeetgtgaeteeeteeceaaceeteaaggageteattgaggagetggte 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55 GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      168 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                               345 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctg
                                                                                                                                                                            316 CICTIACATITAAAGAAACTITITCGCGAGGGACGGITCAACTGAAACTICGAAA 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 425;
                                                                                                                                 405 ctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 191.6; DB Pred. No. 9e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                   Method for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: EF 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08594469
Patent No. 5700665
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, MATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: DNA (genomic)
US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15.1%;
74.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: FICHTER, Richard E REGISTRATION NUMBER: 26,3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & T
                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: M
TITLE OF INVENTION: P
TITLE OF INVENTION: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                  US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225
                                           ô
                                                                                   g
                                                                                                                                 δ
                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                 type coding for this protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 teccegagecetgtgaetecetececaaeceteaaggageteattgaggagetggteaae 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76 ATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTG 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    228 accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---g 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16 TCCCCAGGCCCTGTGCCTCCCTCTACGCCCCTCAGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 384;
                                                                                                        APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 193.4; DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 2.4e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                      LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                           : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECISTRATION NUMBER: 28,665
RECISTRATION NUMBER: 28,665
REPERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                           FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.2%;
illarity 75.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 384 base pairs
TYPE: nucleic acid
                                           MINTY, Adrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                               20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 268; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE
                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-371-121-17
                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                  STREET:
                                                                                      APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
Method for the extraction of periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                   284
                                                                                                 285 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg- 343
                                                                                                                                                                                235 GCCATCGAGAAGACCCAGAGGATGCTGAGGGATTCTGCCCGCACAAGGTCTCAGCTGGG 294
                                                                                                                                                                                                                                       344 --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 401
                                                                                                                                                                                                                                                             115 AACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAAC 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                      402 ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 459
                                                                                                                                                                                                                                                                                                                                        168 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac
                                                                                 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15.1%; Score 191.6; DB 1 74.9%; Pred. No. 4.1e-47; Live 0; Mismatches 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 625 Slaters Lane - Fourth Floor CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REF/LEGOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, RICHARD E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08594469 Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: MALDONADO, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: SALOME, MATC
TITLE OF INVENTION: Methor
TITLE OF INVENTION: perip
TITLE OF INVENTION: presel
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 15.1
Best Local Similarity 74.9
Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: Virginia COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEGOUX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-594-469-1
                                                                               225
                                                                                                                                                                                                                                                                           qq
                                      g
                                                                               ð
                                                                                                                 Db
                                                                                                                                                            ò
                                                                                                                                                                                                g
                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Method for the extraction of TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the TITLE OF INVENTION: presence of arginine NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2,
                                      285 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg- 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcctccccgagccctgtgactccctccccaacctcaaggagctcattgaggagctggtc 167
175 CTGACAGCTGGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGT 234
                                                          344 --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaac 401
| ||||||| |
                                                                                                                                                      295 CAGTITICCAGCITGCATGICCGAGACACCAAAATCGAGGIGGCCCCAGTITGIAAAGGAC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          402 ctgctcacctatgtaaggggggtttatcgccatggaaatttcagatgaagcatgaaaa 459
                                                                                                                                                                                                                                   355 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCAACTGAAACTTCGAAA 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15.1%; Score 191.6; DB 2;
llarity 74.9%; Pred. No. 9e-48;
Conservative 0; Mismatches 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08906957 Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REI
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method f
TITLE OF INVENTION: periplas
TITLE OF INVENTION: presence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; MOLECULE TYPE: DNA (genomic)
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FICHTER, Richard E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 425 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
STREET: 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Simples 268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                             RESULT 10
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                      ò
                                                                    qq
                                                                                                               ŏ
                                                                                                                                                      a
                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
```

<u>ب</u>

```
FILING DATE: 08-JAN-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                              Best Local Simi
Matches 268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                 Query Match
                                                                                               108
                                                                                                                                                                                                                                                          512
                                                                                                                                                                                                                                                                                                                                                           344
                                                                                                                                                                                                                            225
                                                                                                                                                                                         g
                                                                                                                                                                                                                                                    . q
                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                             ò
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Method for the extraction of TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the TITLE OF INVENTION: presence of arginine NUMBER OF SEQUENCES: 9
                                                                                                                                                                                            gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg 343
gcctccccgagccctgtgactccctccccaacctcaaggagctcattgaggagctggtc 167
                ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 284
                                                                                                                                                                                                               344 --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 401
                                                                                                                                                                                                                                                                           aacatcaccagaatc---aggcatccttgcaacggcagcatggtggagcgtcaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 625 Slaters Lane - Fourth Floor
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08906957
Patent No. 5856142
GENERAL INFORMATION:
APPLICANT: LEGGUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, MATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 06 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-906-957-1
                                                                                                                                                                                           285
108
                                                             168
                                                                                                                             225
                              g
                                                          ò
                                                                                        Ор
                                                                                                                           ò
                                                                                                                                                        Dp
                                                                                                                                                                                         ò
                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                        9
```

```
.;
;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MITTY, Adrian
APPLICANT: KAGRAD, Wourd
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                 401
                                             Gaps
                                                                                        gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 167
                                                                                                                               392 GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               402 ctgctcacctatgtaaggggagtttatcgccatggaaatttcagatgaagcatgaaaa 459
                                                                                                                                                                        --gatttccagtgaacgcagccgagacaccaaattgaagtgatccagttggtgaaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  632 CAGTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAAGGAC
                                                                                                                                                                                                                                                                                                                                                       gocatecaaaagaacecagaagatgetgaaageaetgtgeteteaaaageeegeggeagg-
                                           9
Length 4410;
                                           84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PatentIn Release #1.0, Version #1.25
  DB 2;
Score 191.6; DB 3
Pred. No. 4.1e-47;
0; Mismatches 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 3000 K Street, N.W., Suite Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US 07/938,161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 24, Application US/08371121; Patent No. 5652123; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOLEY & LARDNER
15.1%;
74.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-MAR-1992
                    Similarity 74.9
58; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 30-NOV-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: F
FILING DATE: 27-MAR-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
```

```
gecetgtgaetecetececaaceeteaaggageteattgaggagetggteaacateaeee 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATGGAG 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         352 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 GCCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    295 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      235 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                               PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 185.8; DB 1
Pred. No. 4.2e-46;
0; Mismatches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  412 atgtaaggggagtttatcgccatggaaatttca 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTTAAAGAAACTTTTTCGCGAGGACGGTTCA 334
                                                                                                                                      CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 007/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA: FR 91 103904
FILING DATE: 29-MAR-1991
                                                                                                       US/08/371,12
                                            PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 26, Application US/08371121; Patent No. 565212; GENERAL INFORMATION: GENERAL APPLICANT: CAPUT, Daniel
  : Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14.68;
76.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 14.6
Best Local Similarity 76.6
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
                                                                           CURRENT APPLICATION DATA
APPLICATION NUMBER: US
                                            OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (202)
                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ς,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178 agaatc---aggcatccttgcaacggcagcatggtgtgggagcgtcaacctgaccgccg 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118 gecetgtgaetecetececaaceeteaaggageteattgaggagetggteaacateace 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 GCCCTGTGCCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                            14.8%; Score 187.4; DB 1
76.9%; Pred. No. 1.4e-46;
tive 0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GUILEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, MOULEA
APPLICANT: LABIT-LE BOUTELLER, Christine
APPLICANT: MAGAZIN, MAILYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        412 atgtaaggggagtttatcgccatggaaatttca 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 3000 K Street, N.W., Suite 500
                                                                                                     16781/383
FR 91 03904
                FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08371121 Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                              LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 14.8
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                              TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Washington, D.C.
                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 20007-5109
COMPUTER READABLE FORM:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                 STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                 US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Wa
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

Gaps

9

61

```
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: Lransformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----agccctgtgactcccccaaccct 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caaggageteattgaggagetggteaacateaceeagaateaggeateeetetgeaaegg 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      203 cagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctct 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14.6%; Score 185.4; DB 1
68.6%; Pred. No. 6.6e-46;
Live 0; Mismatches 116
                                                                                                   LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                       SEE: FOLEY & LARDNER: 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27 MAR 1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
FERRARA, Pascual
GUILLEWOT, Jean-Claude
LEPLATOIS, Pascal
MINIY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cctcggtggccttgcctccccg----
                                                                                                                                                                                                                                                                                                           COUNTRI: ......
ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATLED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INPORMATION:
NAME: SAXE, BETNHARD
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 14.6
Best Local Similarity 68.6
Matches 293; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-371-121-26
                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                   APPLICANT:
APPLICANT:
                                                                                   APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

Search completed: May 13, 2001, 14:21:41 Job time: 17852 sec

```
81.3
317
12
                                                                                                                                                                                      May 13, 2001, 14:30:23 ; Search time 472.02 Seconds (without alignments) 482.341 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgt.....atcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / cgn1_8/gcdata/geneseq/geneseqn/NA1991.DAT:*
/ cgn1_8/gcdata/geneseq/geneseqn/NA1981.DAT:*
/ cgn1_8/gcdata/geneseq/geneseqn/NA1986.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1986.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1989.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1989.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1991.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1992.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1991.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1993.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1995.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1995.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1995.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1995.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1997.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
/ cgn1_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N_Geneseq_0401:*
1. /cgnl_8/gcgdata/geneseq/geneseqn/NA1980.DAT:*
2. /cgnl_8/gcgdata/geneseq/geneseqn/NA1981.DAT:*
3. /cgnl_8/gcgdata/geneseq/geneseqn/NA1982.DAT:*
4. /cgnl_8/gcgdata/geneseq/geneseqn/NA1982.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1356552
                          GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       678276 seqs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC Gapont 1.0
                                                                                                                                                                                                                                                                                                              US-09-451-527-102
390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14:
15:
16:
17:
19:
                                                                                                                                                                                                                                                                                                                                         Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                 Title:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

|  |                              | DESCITATION | Canine interleukin | Canine mature inte | Canine mature inte | Canine mature inte | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | <u></u>                      |             |                    | 255564             | 255561             | 255562             | 255557             | 255558             | 255555             | 255556             | 255565             | 255566             | 255559             |
|  | ä                            | ;           | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 |
|  | Query<br>e Match Length DB 1 | 11 6110     | 390                | 390                | 1269               | 1269               | 393                | 393                | 1302               | 1302               | 330                | 330                | 333                |
|  | Query                        |             | 1.00.0             | 100.0              | 100.0              | 100.0              | 6.7                | 7.96               | 96.7               | 7.96               | 84.6               | 84.6               | 81.3               |
|  | מ<br>ני                      |             | 390                | 390                | 390                | 390                | 377                | 377                | 377                | 377                | 330                | 330                | 317                |
|  | Result<br>No.                | ; ;         | _                  | 7                  | m                  | 4                  | ស                  | 9                  | 7                  | 8                  | σ                  | 10                 | 11                 |
|  |                              | ;           |                    | ပ                  |                    | υ                  |                    | U                  |                    | ပ                  |                    | υ                  |                    |

Claim 1i; Page 238-239; 264pp; English.

PS

| Canine mature intercanine interleukin Canine interleukin Human low adenosine rehuman low adenosine rehuman low adenosine resequence encoding Human low adenosin Human low adenosin Human low adenosin Human low adenosin Human low adenosine reCytokine NC30. O Gly41-Cytokine cod Asp41-Cytokine signal se Cytokine signal se Plasmid precillose binding Cellulose binding Laccase gene. Mycellulose binding Laccase gene. Mycellulose binding Laccase gene. Mycellulose binding Laccase gene. Mycellulose lunan neuronal nic Human neuronal nic   | S  DNA coding region.  inhibitor; immune response;  mune disease; vaccine; ss  RS;  RS;  proteins from cats or dogs,  umors or autoimmune disease .  |
|---|--|
| 21 255560<br>22 255560<br>22 255533<br>22 A35212<br>22 A35212<br>23 A35210<br>24 A35210<br>25 F21333<br>21 A35210<br>21 A35210<br>21 A35210<br>22 A35210<br>22 A35210<br>22 A35210<br>23 C28944<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>22 A35215<br>21 A35215<br>21 A35215<br>21 A35215<br>22 A35215<br>21 A35215<br>22 A36941<br>22 A36941<br>22 A36941<br>23 A36941<br>24 A4683<br>26 A36941<br>27 A283<br>27 A36941<br>27 A283<br>27 A36941<br>27 A283<br>27 A36941<br>27 A36941<br>27 A36941<br>27 A283<br>27 A36941<br>27 A3 | ALIGNMENTS  BP.  body; canine; ancer; autoimm  wonderling R  moregulatory p  enting e.g. tun   |
| 1.3 333<br>5.6 5.6 1272<br>9.2 1270<br>9.2 1270<br>9.2 1270<br>9.2 1282<br>9.2 1282<br>9.2 1282<br>9.2 12982<br>9.2 12982<br>9.3 1297<br>1.4 60<br>6.1 5670<br>6.1 1.4 60<br>9.2 2330<br>9.2 2349<br>9.2 33192<br>9.3 3192<br>9.6 9.7 2249<br>9.7 2249<br>9.8 8.8 8.8 1386<br>9.9 2 2300<br>9.1 2 2249<br>9.2 3192<br>9.2 3192<br>9.3 3192<br>9.6 8.8 8.8 1387  | rd; cDNA; (first ent eukin-13 ( 3; IL-13; ion; tumou ris.  99WO-US1 98US-008 CORP. S, Dreitz 623/06. 3. encoding eating or   |
| 112<br>113<br>114<br>115<br>116<br>117<br>118<br>119<br>119<br>119<br>119<br>119<br>119<br>119  | ULT 1 255563 standard 255563; 14-MAR-2000 (f Canine interleu Interleukin-13; immunoregulatio Canis familiari WO9961618-A2. 02-DEC-1999. 28-MAY-1999; 29-MAY-1999; 4-ESKA C Sim G, Yang S, WPI; 2000-07262 P-PSDB; Y58223. Nucleic acids e useful for trea  |
| O   | RESCUENCE OF THE PROPERTY OF T |

```
Sequences encoding canine interleuse. Light connected and 78 respectively. The invention relates to canine confering a canine or feline (D154 (CD40 ligand), canine LL-5, canine LL-13, feline colony-stimulating factor (GMCSF), and nucleotides which encode these interferon-alpha (IRN-alpha) and feline granulocyte macrophage accounty-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins way be used as uncleic acids, specific antibodies and inhibitors may be used as a vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including a liergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                 Z55552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 390; DB 21;
100.0%; Pred. No. 1.9e-102;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 aggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , (0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                        and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
```

180

240

300

and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine CD16.

IL-4, canine or feline FIL-3 ligand, canine IL-3, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, 121 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180 211 331 151 241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggatttccagtgaa 300 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 360 91 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease 61 agecetgtgaetecetececaaceeteaaggageteattgaggagetggteaacateace 181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg ö Length 390; Indels Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other; 100.0%; Score 390; DB 21; 100.0%; Pred. No. 1.9e-102; Live 0; Mismatches 0; Wonderling RS; Claim 11; Page 239; 264pp; English. 99WO-US11942. Yang S, Dreitz MJ, 98US-0087306 Best\_Local Similarity 100. Matches 390; Conservative and in drug targetting. WPI; 2000-072623/06 (HESK-) HESKA CORP P-PSDB; Y58223 WO9961618-A2 28-MAY-1999; 29-MAY-1998; 02-DEC-1999 Query Match Sim G, 150 210 301 ò g δ d ò g οy qq Q 8 á Dp

ö

Gaps 9 9

; 0

.. 0

361 aggggagtttatcgccatggaaatttcaga 390

ò

```
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Z55562/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                 Db
                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences 25552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
CC feline CD154 (CD40 ligand), canine or feline CD40, canine or
CC feline CD154 (CD40 ligand), canine IL-13, feline
CC feline CD154 (CD40 ligand), canine IL-3, canine IL-13, feline
CC finerferon-1alpia (IRN-alpha) and feline granulocyte macrophage
CC colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and incleotides and bundans).
CC mucleic acids, specific antibodies and inhibitors may be used as
cresponse in animals (particularly cats, dogs, horses and humans).
CC They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
cc an also be used for the recombinant production of a protein, while
can also as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC The proteins may be used to raise antibodies and to screen for
condulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57..449
/*tag= a
/product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                            Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 11; Page 235-236; 264pp; English.
30 AGGGAGTTTATCGCCATGGAAATTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                    Z55561 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                          14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y58223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                       Z55561;
                                   g
                                                                                                                                                                                                                                                                       NAME OF THE PROPERTY OF THE PR
```

```
117 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 176
                                                                                                                                                   240
                                                                                                                                                                                                                                                                                        cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctatgta 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                canine or
57 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or.dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                               acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa
                                                                                                                                                                                                                             sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline FL-3 ligand, canine or feline FL-3 ligand, canine IL-13, feline feline TD-3, canine IL-13, feline con feline CD-40 ligand), canine IL-5, canine IL-13, feline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                   361 aggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1i; Page 237-238; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Z55562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55562;
```

õ

Query Match 100.0%; Score 390; DB 21; Best Local Similarity 100.0%; Pred. No. 2.8e-102; Matches 390; Conservative 0; Mismatches 0;

ö

Gaps

; 0

Length 1269; Indels 29-MAY-1998;

```
interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense obligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1034
                                                                                                                                                                                                                                                                                                                                                                                                                    agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                    09
                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cagaatcaggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1093 CAGAATCAGGCATCCCTCTGCAACGCCAGCATGGTGTGGAGCGTCAACCTGACCGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                913 CGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1033 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGGCGCCATCCAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss
                                                                                                                                                                                                                                                                                                                                                                    .
0
                                                                                                                                                                                                                                                                                                                               100.0%; Score 390; DB 21; Length 1269; 100.0%; Pred. No. 2.8e-102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                               Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 aggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255557 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 100. Matches 390; Conservative
                                                                                                                                                                                                                                               and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-DEC-1999
                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
   $$$$$$$$$$$$$$$$$$$$$$$
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Filt-3 ligand, canine or feline CD46, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
IL-4, canine or feline Filt-3 ligand, canine IL-13, feline
IL-4, canine or feline filt-3 ligand, canine IL-13, feline
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, may be used as
vaccines for therapeutic or prophlactic regulation of an immune
response in animals (particularly cats, days, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
cucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                  useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 377; DB 21; Length 393;
Pred. No. 1e-98;
0; Mismatches 0; Indels
                                                                                                                                                                                                                                  Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;0
                                                               Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtaaggggagtttatcgccatggaaatttcaga 393
                                                                                                                                                                                                   Claim 11; Page 232-233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96.7%;
99.2%;
                                                                 Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 99.2
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and in drug targetting.
                                                                                                WPI; 2000-072623/06
                                  (HESK-) HESKA CORP.
                                                                 Yang S,
                                                                                                                P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                 Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
```

Z55558/c

S

181

```
Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine CDL4, canine or feline CDL5 (IL-4, canine or feline CDL5 (IL-4, canine or feline CDL5) feline (IL-4, canine or feline CDL5) feline construction and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated colons for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while considered as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for and and antipors of activity, while the antibodies may be used in detection, and the constitution and activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                      Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 233; 264pp; English.
BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
255558 standard; cDNA; 393
                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; Y5822]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                             14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
```

```
1;
                                                                                                                                          agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 120
                                                             atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                                   AGCCCTGTGACTCCCTCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC
  21; Length 393;
                         Indels
                         ;
o
96.7%; Score 377; DB 21
99.2%; Pred. No. 1e-98;
iive 0; Mismatches
                        Conservative
            Similarity
 Query Match
Best Local Simi
Matches 390;
                                               -4
                                                                                                                   333
                                                                                           61
                                                                    qq
                                                                                           ò
                                                                                                                  g
                                                                                                                                         ò
                                                                                                                                                               8
```

```
coquences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
LL-4, canine or feline Fit-13 ligand, canine or feline CD154 (CD40 ligand), canine IL-13, feline
LL-4, canine or feline Fit-1 aligand, canine IL-13, feline
colory-stimulating factor (GMSE), and nucleotides which encode these
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colory-stimulating factor (GMSE), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
colories for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
                             213 ATGTACTGCGCAGCTCTAGAATCTCTGATGTCTCCGGACTGCAGCGCCATCCAAAGG 154
                                                                  297
                                                                                                                                    gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 357
                                                                                                  94
                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / proteins from cats or dogs,
tumors or autoimmune disease
                                                                 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences Z55552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                              Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling RS;
                                                                                                                                                                                                     358 gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                      ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory useful for treating or preventing e.g. t
                                                                                                                                                                                                                       Claim 1i; Page 229-230; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
52..447
/*tag= a
                                                                                                                                                                                                                                                                                                                         255555 standard; cDNA; 1302 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                            14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G,
                                                                                                                                    298
                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                         255552
                             a
                                                                                               g
                                                                                                                                    οy
                                                                                                                                                                   q
                                                                                                                                                                                                     ολ
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                             ò
```

immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease

```
Nucleic acids encoding useful for treating or
WPI; 2000-072623/06
           P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
Z55565
ID Z5
XX
 g
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð.
                                                                                             1;
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and in drug targetting.
                                                                                                                                                                                         52 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 111
                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                               acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt 297
                                                                                                                                                                                                                                                                                                                            352 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 411
                                                                                             Gaps
                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                        acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggcagatttccagt
                                                                                                                                                                                                                                                                                                          gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                             .,
m
                                                                          Score 377; DB 21; Length 1302;
Pred. No. 1.5e-98;
0; Mismatches 0; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                               Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                         gtaaggggagtttatcgccatggaaatttcaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
complement (856..1251)
                                                                           96.78;
99.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                               Z55556 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                          Query Match
Best Local Similarity 99.2
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                   Z55556;
                                                                                                                                                                                                                                                                                                                                                                                              æ
                                                                                                                                                                                                            172
                                                                                                                                                                                                                                                                                      292
                                                                                                                                                                       112
                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                               358
88888×8
                                                                                                                                 g
                                                                                                                                                                   g
                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                             QΩ
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                     à
                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                              õ
```

```
allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antiquen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1251 ATGCCGCTCTGGTTGACTGTGGTCATTGCTCTCACCTGCCTCGGTGGCCTTGCCTCCCCG 1192
                                                                                                                            and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             298 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1191 AGCCCTGTGACTCCCTCCCCAACCTCAATGAGGAGCTGGTGACTGGTCAACAACATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1011 ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGGGGCAGGGCAGATTTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1302;
                                                                                                       sequences encoding canine interleukin-13 (IL-13) clones 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Indels
                                                            Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 377; DB 21;
Pred. No. 1.5e-98;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 358 gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
Claim 1i; Page 231-232; 264pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96.78;
99.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 96.7%
Best Local Similarity 99.2%
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z55565 standard; cDNA;
```

ï

```
Dp
 셤
                                    ò
                                                                                                                                                                                                                                                   Sequences encoding canine interleukin-13 (11-13) clones 80
and 78 respectively. The invention relates to canine
11-4, canine or felline Fil-3 ligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine 11-5, canine L1-13, felline
colony-stimulating factor (GMCSF), and mucleotides which encode these
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The prophlactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      agcoctytgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 agccctgtgactccctcccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggatttccagtgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-25550 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
Canine mature interleukin-13 (IL-13) clone 78 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 330; DB 21;
Pred. No. 2.7e-85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1i; Page 239-240; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84.68;
                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                               98US-0087306.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and in drug targetting.
                                                                                                                                                                                                                                                                                                                                   2000-072623/06.
                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                     Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                       P-PSDB; Y58224
                                                                                                                      WO9961618-A2
                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                    Ġ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                    Sim
```

```
sequences encoding canine interleation. It is clones 80
and 78 respectively. The invention relates to canine
25 IL-4, canine or felline Fit-13 ligand, canine or felline CD40, canine or felline CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
26 interferon alpha (IFN-alpha) and felline granulocyte macrophage
27 colony-stimulating factor (GMCSF), and nucleotides which encode these
28 interferon alpha (IFN-alpha) and felline granulocyte macrophage
29 colony-stimulating factor (GMCSF), and nucleotides which encode these
20 inmunoregulatory proteins. The proteins, their associated
20 nucleic acids, specific antibodies and inhibitors may be used as
20 response in animals (particularly cats, dogs, horses and humans).
21 They may be used to treat autoimmune or infectious diseases including
22 allergies, tumours, inflammation and graft rejection, and to increase
23 the response from a co-administered antigen. The nucleotide sequences
24 can also be used for the recombinant production of a protein, while
25 nucleotide fragments are useful as probes, as amplification primers and
26 as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
26 modulators of activity, while the antibodies and to screen for
27 and also be used to raise antibodies and be used in detection,
241 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canine mature interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 21;
2.7e-85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84.6%; Score 330; DB
100.0%; Pred. No. 2.7
:ive 0; Mismatches
                                                                                               361 aggggagtttatcgccatggaaatttcaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 11; Page 241; 264pp; English.
                                                                                                                                                                                                                                             255566/c
ID 255566 standard; cDNA; 330 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic
                                                                                                                                                                                                                                                                                                                                                   z55566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
```

ö

301

q οy. 욥. ò

g δ us-09-451-527-102.rng

```
888888
                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                ò
                                                                                                                                                                                    ρp
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences 25552-25560 and 255561-25556 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline FIL-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-1apha (IFN-alpha) and feline granulocyte macrophage
clony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucletc acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
response from a co-administered antigen. The nucleotide sequences
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
                            211
                                                  240
                                                                    151
                                                                                         300
                                                                                                                                 360
                                                                                                             91
                                                                                                                                                     31
                                                                                                                                                                                                                                                                                                                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
        acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagggatttccagtgaa
                                                                                                   cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta
                                                                                                                                           atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                           Canine mature interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                                                                                                                                         aggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 11; Page 233-234; 264pp; English
                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0087306
                                                                                                                                                                                                                                                Z55559 standard; cDNA; 333
                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dreitz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                               Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; Y58222
                                                                                                                                                                                                                                                                                                                                                                                   WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                        14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ö
                                                                                                                                                                                                                                                                    255559
                                                                                                                                                                                                                           11
         121
                            270
                                                181
                                                                    210
                                                                                         241
                                                                                                             150
                                                                                                                                301
                                                                                                                                                     90
                                                                                                                                                                         361
                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim
                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                         g
         ò
                       Q
                                              δ
                                                                Q
                                                                                       ò
                                                                                                        QQ
                                                                                                                                ò
                                                                                                                                                                         ò
```

```
1;
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                         121 cagaatcaggcatccttctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 agccctgtgactccctcaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                      atgractgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                      Length 333;
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                               Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other;
                                                                                                                                                  Score 317; DB 21;
Pred. No. 1.4e-81;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 235; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP.
                                                                                                                                                    81.3%;
milarity 99.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255560/c
ID Z55560 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                           and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06.
                                                                                                                                                                        Best Local Similarity
Matches 330; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y58222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   358
                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                61
```

29-MAY-1998; 98US-0087306

```
and 78 respectively. The invention relates to canine or feline CD40, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline cointerferon-alpha (IFN-alpha) and feline granulocyte macrophage of interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunor-acquiatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).

The proteins may be used to raise antibodies and to screen for andulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
Έ
                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match 81.3%; Score 317; DB 21; Length 333; Best Local Similarity 99.1%; Pred. No. 1.4e-81; Matches 330; Conservative 0; Mismatches 0; Indels
 sequences encoding canine interleukin-13 (IL-13) clones 80
                                                                                                                                                                                                                                                                                                                                                           Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canine interleukin-13 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33 GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z55554 standard; cDNA; 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                        and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255554
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

```
Sequences encoding canine interleuring (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or felline Fit-3 ligand, canine or felline
IL-4, canine or felline Fit-3 ligand, canine IL-13, felline
IL-4, canine or felline Fit-3 ligand, canine IL-13, felline
IL-6, canine CD154 (CD40 ligand), canine IL-5, canine IL-13, felline
Interferon-alpha (IEN-alpha) and felline granulocyte macrophage
CC colony-stimulating factor (GMCSF), and nucleotides which encode these
Immunoregulatory proteins. The proteins, their associated
Immunoregulatory proteins. The prophlactic regulation of an immune
CMC nucleic acids, specific antibodies and inhibitors may be used as
CMC vaccines for therapeutic or prophlactic regulation of an immune
CMC response in animals (particularly cats, dogs, horses and humans).
CMC allergies, tumnours, inflammation and graft rejection, and to increase
CMC allergies, tumnours, inflammation and graft rejection, and to increase
CMC anies of contractive recombinant production of a protein, while
CMC as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CMC and activity, while the antibodies and to screen for
CMC and activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agccctytgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 agocotigtgactocotococaaccotoaaggagotoattgaggagotggtcaacatoaco 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 atgtactgogoagctctagaatctctgatcaatgtctccgactgcagogocatccaaagg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                   Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71.3%; Score 278; DB 21;
100.0%; Pred. No. 1.9e-70;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wonderling RS;
                                                                                                                                                                                                                          Claim 11; Page 229; 264pp; English
                                                                                Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Z55553 standard; cDNA; 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                      WPI; 2000-072623/06.
                                        (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

ó

F21334 standard; DNA; 1270 BP

F21334

(first entry)

14-MAR-2001

F21334;

```
Sequences 25552-25560 and 25561-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine of feline correctively. The invention relates to canine or feline or feline FIL-3 ligand, canine or feline CDD40, canine or feline or feline FIL-3 ligand, canine or feline corrective corrective corrective corrective corrective corrective corrective corrective corrective macrophage interferon-alpha (FRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins which encode these immunoregulatory proteins. The proteins and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 272 BP; 64 A; 91 C; 69 G; 48 T; 0 other;
                                                                                                                                                                                                                                                                                                                      Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 228; 264pp; English.
                                                                                                                                                                                 99WO-US11942
                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                                                            98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      drug targetting.
                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                          Canis familiaris
                                                                                       WO9961618-A2
                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                            29-MAY-1998;
                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in
```

224 284 45 tggccttgcctcccgagccctgtgactccctccccaacctcaaggagctcattgagga 104 105 gctggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtgtggagcgt 164 Gaps 9 cagegecatecaaaggacecagaggatgetgaaageactgtgeteteaaaageeegegge 3, 65.6%; Score 256; DB 21; Length 272; 98.9%; Pred. No. 3.8e-64; ive 0; Mismatches 0; Indels Conservative Similarity Local Simhes 269; Query Match Best Loca Matches 225 g ò g qq g ö ò δ

ij

present invention

RESULT 15

The present invention describes low adenosine (A) content antisense oligonucleotides and compositions (I) comprising them. In the antisense oligonucleotides the A is replaced by a 'Universal' or alternative base. (I) can have respiratory, bronchodilator, antinfinflammatory, analgesic, immunosuppressive, antiasthmatic, hypotensive and cytostatic activities. The antisense oligonucleotides and (I) can be used to down-regulate the expression and or activity of target polypeptides associated with ung/respiratory disorders and malignancies, such as stimulating and activating peptide factors and transmitters, transcription factors, immunoglobulins and antibodies, antibody receptors, cytokines and chemokines, endogenously produced specific and non-specific enzymes, binding proteins, adhesion molecules and their receptors, central nervous sand non-nervous system correctors, and peripheral nervous and non-nervous system receptors, binding proteins, growth factors, vasoactive peptides and receptors, binding proteins and malignancy associated proteins. The antisense oligonucleotides may be used in this way to treat disorders including respiratory obstruction which are associated with a disease or condition selected from pulmonary vasoconstriction, inflammation, allergic fibrosis (CF), allergic ribinitis (AR), pulmonary when envisemed the condition embreamed the condition embreamed the condition embreamed the condition embreamed the condition of the conditi Low adenosine antisense oligonucleotide; phosphorothioate; allergy; human; airway disorder; bronchoconstriction; lung inflammation; surfactant depletion; respiratory; bronchodilator; antinflammatory; immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic; respiratory obstruction; pulmonary obstruction; impeded respiration; surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS; respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis; pulmonary hypertension: emphysema; pulmonary transplantation rejection; chronic obstructive pulmonary disease; pulmonary infection; bronchitis; hypertension, emphysema, chronic obstructive pulmonary disease (COPD), upulmonary transplantation rejection, pulmonary infections, bronchitis, and/or cancer. F18434 to F21543 represent human polynucleotide fragments and antisense oligonucleotides used in the exemplification of the Low adenosine (A) content antisense oligonucleotides which do not trigger adenosine receptors during metabolism, useful e.g. for treating cancers and respiratory obstructions -Human low adenosine antisense oligonucleotide related sequence #2901 Disclosure; Page 1336; 1592pp; English. 24-MAR-2000; 2000WO-US08020. EAST CAROLINA. WPI; 2000-679539/66. (NYCE/) NYCE J W. WO200062736-A2 (UYEC-) UNIV Homo sapiens 06-APR-1999; 26-OCT-2000 cancer; ss Nyce JW; 

```
SQ Sequence 1270 BP; 288 A; 335 C; 336 G; 311 T; 0 other;
```

| 2;   |   |  |   |  |   |  |  |
|--|---|--|---|--|---|--|--|
| Query Match 59.2%; Score 230.8; DB 21; Length 1270; Best Local Similarity 77.7%; Pred. No. 1.1e-56; Matches 306; Conservative 0; Mismatches 82; Indels 6; Gaps | atggegetetggttggaetgtggteattgeteteacetgeeteggtggeettgeeteeeg 60<br> | 61 agccctgtgactcctcccaacctcaaggagctcattgaggagctggtcaacatcacc 120<br> | cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177<br> | ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237<br> | aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttcc 294<br> | 295 agtgaacgcagccagacaccaaattgaagtgatccagttygtgaaaaacctgctcacc 354<br> | 355 tatgtaaggggagtttatcgccatggaaatitca 388<br> |
| ry Ma<br>t Loc<br>ches   | 1 45  | 61<br>105  | 121   | 178  | 238   | 295<br>345   | 355  |
| Que<br>Bes<br>Mat  | Oy<br>Db  | Qy<br>Db   | Qy<br>Dp  | Qy   | Ολ<br>Db  | ΟΥ<br>Db   | Qy   |

Search completed: May 13, 2001, 14:30:24 Job time: 18339 sec

Appli Appli Appli

Sequence Sequence

Sequence Sequence

PCT-US91-02311-9

Appli Appli Appli Appli Appli

Sequence 3, A Sequence 7, A Sequence 11, Sequence 13, Sequence 40,

US-08-466-589-9 US-08-467-574-9 US-09-025-691-4 US-09-094-359-7 US-09-172-063-11 US-09-172-063-11 US-09-172-063-11 US-08-172-063-11 US-08-173-294-40 US-09-094-359-11

Sequence Sequence

US-09-062-102-2 US-09-172-063-27 US-09-172-063-29

ALIGNMENTS

Sequence

```
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
                                                                                                                                                                                                                                                                                                                                             APPLICANT: Aversa, Gregorio
APPLICANT: Briere, Francine
APPLICANT: Banchereau, Jacques
APPLICANT: de Vries, Jan
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION OF 435
PRIOR PAPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: DNAX Research Institute STREET: 901 California Avenue CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: US/08/012,543 CLASSIFICATION
                                                                                                                                                                                                                                                                                          Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
Heath, Andrew
                                                                                                                                                                                                                                                            Sequence 1, Application US/08012543
Patent No. 5596072
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: DY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
 1322
1521
1521
1521
2450
2450
720
720
720
720
768
850
870
                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: CDNA
 USA
                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                   US-08-012-543-1
                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: P
STATE:
(without alignments)
301.279 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Appl
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appl
Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appl
                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, A Sequence 3, A Sequence 12, Sequence 10, Sequence 11,
                                                                                                                                   1 atggcgctctggttgactgt......atcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1,
Sequence 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                      May 13, 2001, 14:21:41; Search time 226.02 Seconds
                                                                                                                                                                                                                                                                                                    GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-371-121-2
US-08-371-121-26
US-08-012-543-3
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-371-121-15
US-08-371-121-12
US-08-371-121-24
US-08-594-469-4
US-08-596-957-4
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US93-07645-3
US-08-371-121-12
US-08-371-121-10
US-08-371-121-11
                                                                                                                                                                                                        hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-371-121-9
US-08-814-052-19
US-08-814-052-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-083-485-1
US-09-005-397-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-939-218A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JS-08-706-037-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US95-06815-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JS-08-940-661A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-012-543-1
                                                                                                                                                                                    302621 segs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                           Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                                                                               US-09-451-527-102
                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                      IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425
425
4410
4410
336
1212
1212
102
102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2249
2300
3183
3187
3192
3192
3192
                                                                                                                                                                                                                                                             Post-processing:
                                                                                                                                                                                                          Total number of
                                                                                                                                                                                                                                sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2330.8
2230.8
229.0
189.2
186.2
186.2
186.2
186.2
1185.8
1168.6
1168.6
144.6
                                                                                                                         Perfect score:
                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                     Sednence:
                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
```

DX0302K1

77.78;

```
3
                                                                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                             224
                                                                                                                                                                                                                                                                                                                            237
                                                                                                                                                                                                                                                                                                                                                         284
                                                                                                                                                                                                                                                                                                                                                                                      294
                                                                                                                                                                                                                                                                                                                                                                                                                  344
                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                            45 ATGGCGCTTTTGTTGACCACGGTCATTGCTCTCACTTGCCTTGGCGGCTTTGCCTCCCCA 104
                                                                                                                                                                                                                                                                                                                                                                                                                                               295 agigaacgcagccgagacaccaaaatigaagigatccagiiggigaaaaaccigcicacc 354
                                                                                                                                              9
                                                                                                                    Gaps
                                                                                                                                              1. atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                                                                                  ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                          aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                285 AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCC
                                                                                                                 9
                                                                                     Length 1290;
                                                                                                                 Indels
                                                                                                               82;
                                                                                     DB 1;
                                                                                    Score 230.8; DB 1
Pred. No. 6.8e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                 59.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
                                                                                                               Matches 306; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: double
            CDS
45..443
                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
PCT-US93-07645A-1
          ; NAME/KEY:
; LOCATION:
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                    Query Match
Best Local 3
FEATURE:
                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                          178
                                                                                                                                                                                                                                                                                                                                                        225
                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                     Ωp
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
224
                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                             295 agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 354
                                                                                                                                                                                                                                                                                                                                                            121 cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                  238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaag---gatttcc 294
                                                                                                                                                                                                                                                                                                   1 atggogototggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                             ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1290;
Pred. No. 6.8e-62;
0; Mismatches 82; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , 8e-62;
82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 230.8; I
Pred. No. 6.8e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                       355 tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Human Interleukin-13 NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAPALICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
FRICA PAPALICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-ANG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: Macinicsh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.2%;
ilarity 77.7%;
Conservative
               Conservative
Best Local Similarity
Matches 306; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         al Similarity
306; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                     g
                                                                                                     ò
                                                                                                                                qq
                                                                                                                                                            ò
                                                                                                                                                                                        g
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

ć

Length 1290;

Score 230.8; DB 5;

59.28;

Query Match

```
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LELATOLS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, MARILYO
APPLICANT: MAGAZIN, MARILYO
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
1311 | 1111 | 1111 | 1 | 1111 | 1 | 1111 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                              238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcc 294
                                                                                                                                                              cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295 agigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacc 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ggcatgtactgcggcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 37-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BETNHARD D.
RESISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 15, Application US/08371121
Patent No. 565123
GENERAL INFORMATION:
APPLICANT: CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-371-121-15
                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355
                                                                                                                                                      121
       à
                                                                           q
                                                                                                                                                  δ
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                               οq
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
```

```
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: CAPUT, Daniel
APPLICANT: EERRARA, Pascual
APPLICANT: EERRARA, Pascual
APPLICANT: LEPLATOIS, Pascal
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: MARAD, Mourad
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                      61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 cagaatc---aggcatccttgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     295 agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg...gatttcc
                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                    Length 1297;
                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                    83;
                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                58.8%; Score 229.2; DB 3
77.4%; Pred. No. 2.1e-61;
iive 0; Mismatches 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355 tatgtaaggggagtttatcgccatggaaatttca 388
|| || || | | || || || || || || || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          417 CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 17, Application US/08371121
; Patent No. 5652123
; GENERAL INFORMATION:
                                                   15:
 (202) 672-5300
(202) 672-5399
                                TELEX: 904136,
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
                                                                                                                                                                                                                                                                                                                                                                    Matches 305; Conservative
                                                                                                                                                                                                                                              mat_peptide
117..452
                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & L
                                                                                                       nucleic acid
                                                                                                                                                                                                            15..452
                                                                                                                                                          MOLECULE TYPE: CDNA
                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                      STRANDEDNESS:
TELEPHONE:
                                                                                                                                                                                            NAME/KEY:
                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                            LOCATION:
                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                            LOCATION:
                                                                                                                                                                                                                                                                                US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-371-121-17
                   TELEFAX:
                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                       TYPE:
                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                      Best Local
```

us-09-451-527-102.rni

```
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 gecetytyaetteeeteeeaaeeeteaayyayeteattyayyayetyyteaaeateaeee 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 GCCCTGTGCCCTCCTTACAGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 187.4; DB 1;
Pred. No. 9.2e-49;
0; Mismatches 71;
                                                                                                                             APPLICANT: LEPLALOLO,
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                     3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
APPLICATION NUMBER: US 07/938,161
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR.1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT TREORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy DISK
COMPUTER: PR PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                             FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                  FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48.18;
76.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (202) 672-53
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 336 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                       Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Wa
COUNTRY:
                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256 TITTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTGTAAAGGACCTG 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55 teccegagecetgtgacteceteceaacetecaaggageteattgaggagetggtcaae 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 atcacccagaatc---aggcatcctctgcaacggcagcatggtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136 ACAGCTGACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCAGTGCC 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232 atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---g 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                289 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172 accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16 TCCCCAGGCCCTGTGCCTCTACGCCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75; Indels
                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349 ctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11arity 76.2%; Score 188; DB 1; 15.2%; Pred. No. 6.3e-49; Conservative 0; Mismatches 75.
                                                                                                                                                                                                                            FILING DATE:
CLASSIFICATION 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FRIDK APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 20-AAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-AAN-1991
ATTORNEY/AGGNT INFORMATION:
NAME: SAXE, BEINHARD D.
REGISTRATION NUMBER: 28 655
PREPERENTE 20 NUMBER: 28 655
PREPERENTE AND NUMBER: 28 655
CLI...
COUNTRY: USA
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
""""FR: IBM PC compatible
""""FR: IBM PC compatible
""""FR: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5390
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: DNA (genomic) US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 384 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 259; Conserval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
```

δ 엄 ò

316 CTCTTACATTTAAAGAAACTTTTTGGGGGGGGGGGGTTCA 355

g

ò

qq

õ

g

δ g ò g RESULT 6 US-08-371-121-24

S

```
periplasmic proteins of prokaryotic microorganisms in the presence of arginine 9
                                                                                                                                                                                                          229 gocatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg- 287
                                                                                                                                                                     235 GCCATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGG 294
                                                           ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                 ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/906,957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 186.2; DB 2;
Pred. No. 2.4e-48;
0; Mismatches 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for the extraction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ...ьк: US/08/906,957
06-AUG-1997
ON: 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, RICHARD E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/08906957
Patent No. 5856142
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: LEGOUX, Richard APPLICANT: MALDONADO, Paul APPLICANT: SALOME, Marc TITLE OF INVENTION: periplast TITLE OF INVENTION: presence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: DNA (genomic) US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Bacon & Thomas
STREET: 625 Slaters Lane-
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47.78;
75.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : 425 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 47.7
Best Local Similarity 75.5
Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                           US-08-906-957-4
                                                                                            Db
                                                                                                                                                                     qq
                                                                                                                                                                                                                                             qq
                                                                                                                                 δ
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                             182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
122 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                               296 gigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacci 355
                                                                                                                                                    242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 47.7%; Score 186.2; DB 1; Best Local Similarity 75.5%; Pred. No. 2.4e-48; Matches 259; Conservative 0; Mismatches 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                      356 atgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                         302 ATTTAAAGAAACTTTTCGCGAGGGACGGTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: FICHTER, KICHALL L
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION: INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/594,469 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/08594469 Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, PAUL
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for
TITLE OF INVENTION: periplast
TITLE OF INVENTION: presence
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEO ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1: 625 Slaters Lane
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dubner 425 Dure 1 LENGTH: 425 Dure 1 TWPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacon &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
CITY: Al
                                                                                                                                                                                                                                                                                                                      US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-594-469-4
                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                       ð
                                                                                      g
                                                                                                                               ò
                                                                                                                                                                 g
                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

;;

Gaps

```
periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                                                                                                                                                                                                                                                                                                     288 --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 345
                                                                          52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                  112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtggagcgtcaac 168
                                                                                                                                                                                                                       169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                            392 GCCTTCGCTGGCCCTGTGCCTCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 451
                                      Gaps
                                                                                                                                                                     gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg.
                                                                                                                                                                                                                                                                                                                      9
 Length 4410;
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                              346 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  692 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                      78;
 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      extraction
                    6e-48;
                                      0; Mismatches
Score 186.2;
Pred. No. 5.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Method for the TITLE OF INVENTION: periplasmic pro TITLE OF INVENTION: presence of arg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALFLING DATE: 31-JAN-1995
ATTOREX/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08906957 Patent No. 5856142 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: RE
TELECOMMUNICATION INFORMATION:
 47.78;
75.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FICHTER, Richard
                                      Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 22314
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
APPLICATION NUMBER:
                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (703)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 06
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
 Query Match
                                                                                                                                                                                                                                                                                                 229
                                                                                                          셤
                                                                                                                                              ò
                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Method for the extraction of TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the NUMBER OF SEQUENCES: 9 CORRESPONDENCE ADDRESS: ADDRESSEE: Bacon E mic.
                                                                      112 aacatcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                              228
                                                                                                                                                                                                                       287
                                                                                                                                                                                                                                                                                               --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 345
 geotececegagecetgtgaetecetececeaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                                                                 295 CAGTTTTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGAC 354
                                                                                                                                                                                                                     ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc
                                                                                                                                                                 346 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                       355 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: FICHTER, RICHARD E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY, AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08594469 Patent No. 5700665 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Bacon & Thomas
625 Slaters Lane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SED ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGIH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: Vi
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SULT 9
-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-594-469-1
                                                                                                                                              169
                                                                                                                                                                                                                                                                                               288
                                                                                                        셤
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                               g
                          g
                                                                    ò
                                                                                                                                              ò
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                     ö
```

```
ADDRESSEE: FOLEY & LARDNER
   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                 TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                                                            112 aacatcacccagaatc...aggcatcctctgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                            288 ··gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaac 345
                                                                                                                                                                                                                                                                169 ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                 571
                                                                                                                                                                                                                                                                                                                                                                                 287
                                                                                                                                                                                                                                                                                                                                                                                                52 gcctccccgagccctgtgactccctccccaaccctcaaggagctcattgaggagctggtc 111
                                                                                                                                                                                                             392 GCCTTCGCTGGCCCTGTCCCCAGTACTGCCCTCAGGGAGCTCATTGAGGAGCTGGTC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                  229 gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg-
                                                                                                                                                 9
                                                                                                                Length 4410;
                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                DB 2;
                                                                                                             47.7%; Score 186.2; DB 2
75.5%; Pred. No. 5.6e-48;
Live 0; Mismatches 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : MINTY, Adrian
: KAGHAD, Mourad
: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
ETLING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/371,12: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: FOLEY & LARDNER
3000 K Street, N.W.,
                              ; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: CAPUT, Daniel
                                                                                                                                             Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Washington, D.C.
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LA
STREET: 3000 K Stree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: LEPLATOIX,
APPLICANT: MINTY, Adr
APPLICANT: KGGHAD, MO
APPLICANT: LABIT-LE B
APPLICANT: MAGAZIN, M
TITLE OF INVENTION: P
TITLE OF INVENTION: a
TITLE OF INVENTION: a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                Query Match
                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                             ô
```

```
APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
CORRESPONDENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtgaacgcagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 gecetgigactecetececaaceeteaaggageteattgaggagetggteaacateace 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122 agaatc---aggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgccg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGGATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47.6%; Score 185.8; DB 1;
76.6%; Pred. No. 2.9e-48;
iive 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356 atgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                             16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAPUT, Daniel
FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                             APPLICATION NUMBER: FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 26, Application US/08371121 Patent No. 5652123 GENERAL INFORMATION:
                                                                                                                                                                          NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
US-08-371-121-2
                                            FR 91
                                                                                                                                                                                                                                                                     (202) 672-5300
(202) 672-5399
                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                             FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                 TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
```

403 CTCAGCTACACAAAGCAACTGTTTCGCCACGGCCCCTTC 441

qq

: 3000 K Street, N.W., Suite 500 Washington, D.C.

```
130 GGCCGGTGCCAAGATCTGTGTCTCTCCTCTGACCCTTAAGGAGCTTATTGAGGAGCTG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70 Argacecreregereacrecaercerecerecreserrecrrecresereseresececee 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 agcc-----ctgtgactccctcccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109 gicaacaicacccagaaicaggcaiccitigcaacggcagcaiggigiggagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS .
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 168.6; DB 1
Pred. No. 9.1e-43;
                                                                                                                                                                                                                                              Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
/ENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIPICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AGG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                             DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DX0302K1
                                                                                                                                            Dang, Warren
de Waal Malefyt, Rene
                                    ; Sequence 3, Application US/08012543
; Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                              901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: DY
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                     Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                           Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1212 base pairs
                                                                                                                                                                                     Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 68.2
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY d.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                      Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70..465
                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                       Heath,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX:
RESULT 13
US-08-012-543-3
                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                49 Arescercresersacrecasrecrescretrecrisecrisesresrescesecece 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 agcc-----ctgtgactccctcccaaccttcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 GGCCGGTGCCAAGATCTGTCTCTCCCTCTGACCTTAAGGAGCTTATTGAGGAGCTG 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109 gicaacaicacccagaaicaggcaiccitcigcaacggcagcaiggigigigagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     289 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gocaticcaaaagaacccagaagatgictgaaagcactgitgictictaaaaagcccgcgggaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      289 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCCCACTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 109; Indels
                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctcacctatgtaaggggagtttatcgccatggaaatttc 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 168.6; DB 1
Pred. No. 6.2e-43;
                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
RIOR APPLICATION DATE: 91 00137
FILING DATE: 08-JAN-1992
RIOR APPLICATION NUMBER: FF 91 00137
PRIOR APPLICATION NUMBER: FF 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BETNHART D.
REFERENCE/DOCKET NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
                                                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/0028
                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEO ID NO: 26:
SEQUENCE CHARACTERISTICS:
LENGTH: 447 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 68.2
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE: CDNA US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    349
```

g

· S

qq

g

ò

g

,;

Gaps

σ

```
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AGG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGRATION FOR SEQ ID NO: 3:
LENGRATION FOR SEQ ID NO: 3:
TYPE: UNCleic acid
TYPE: Uncleic acid
TYPE: CHARACTERISTICS:
TRANDEDNESS: Gouble
                                                                                                                                                                                                                                                  Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                      à
                                                                                       qq
                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190 AGCAACATCACACAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGGC 249
                                    ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                    atttecagtgaaegecagegaeaecaaaattgaagtgatecagttggtgaaaaaectg 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6.1 agcc-----ctgtgactccctccccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109 gtcaacatcacccagaatcaggcatccttctgcaacggcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 370 GTCTCCA-----GCCTCCCCGATACCAAAATCGAAGTAGCCCACTTTATAACAAACTG 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcaggg 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg 60
                                                                                                        gccatccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcaggg
                                                                                                                                       310 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCCCACTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            43.2%; Score 168.6; DB 5;
68.2%; Pred. No. 9.1e-43;
11ve 0; Mismatches 109;
                                                                                                                                                                                                                                             APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMBUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh
OPERATING SYSTEM: Macintosh
CORRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: PCT/US93/07645A FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Filling Araz.
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FTITING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-3
; Sequence 3, Application PC/TUS9307645A
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 68.2
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                      229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                                                                                                                                                           289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                               Ω
                                                                                                      à
                                                                                                                                     g
                                                                                                                                                                           ò
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
61 agoc-----ctgtgactccctcccaaccctcaaggagctcattgaggagctg 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          310 GCCATCTACAGGACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCCCACTACG 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109 gicaacaicacccagaaicaggcaicccictgcaacggcagcaiggigiggagcgicaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229 gocatocaaaggacocagaggatgotgaaagcactgtgeteteaaaagcocgggggggg 288
                                                                                                     370 GICTCCA-----GCCTCCCCGATACCAAATCGAAGTAGCCCACTTTATAACAAAACTG 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289 atttccagtgaacgcagacgagacaccaaaattgaagtgatccagttggtgaaaaacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctccccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 168.6; DB 5;
Pred. No. 9.1e-43;
0; Mismatches 109;
                                                                                                                                            349 ctcacctatgtaaggggagtttatcgccatggaaatttc 387
                                                                                                                                                                                       424 CTCAGCTACACAAAGCAACTGTTTCGCCACGGCCCCTTC 462
                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
```

?

Search completed: May 13, 2001, 14:21:44 Job time: 17855 sec

em\_esthum23: em\_esthum24: em\_esthum25: em\_esthum26:

em\_esthum14 em\_esthum15 em\_esthum16 em\_esthum18 em\_esthum19 em\_esthum20 em\_esthum21 em\_esthum22

em\_esthum17

em\_esthum27: em\_esthum28: em\_estin1:\*

em\_estin2

em\_estin4: em\_estin5: em\_estom1:

em\_estom2: em\_estov1: em\_estov2:

```
May 13, 2001, 11:40:38; Search time 5997.24 Seconds (without alignments) 568.108 Million cell updates/sec
                                                                                                                                                                     1 atggcgctctggttgactgt.....atcgccatggaaatttcaga 390
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                          9623517 seqs, 4368049070 residues
                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                   US-09-451-527-102
                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_estba:*
em_estfun:*
em_esthum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:*
gb_est4:**
gb_est5:**
gb_est6:**
gb_est6:**
gb_est10:**
gb_est11:**
gb_est11:**
gb_est11:**
gb_est11:**
gb_est12:**
gb_est12:**
gb_est12:**
gb_est13:**
gb_est13:**
gb_est21:**
gb_est21:**
gb_est21:**
gb_est21:**
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_esthum2:*
em_esthum3:*
em_esthum4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_esthum5:*
em_esthum6:*
em_esthum7:*
em_esthum8:*
em_esthum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_est37:*
gb_est38:*
gb_est38:*
gb_est40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est36:*
                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                    EST:*
                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                      sednence:
                                                                                  Run on:
```

em\_estpl9:\*
em\_estpl10:
em\_estro1:\*
em\_estro2:\*

em\_estp17: em\_estp18:

em\_estp16

em\_estpl5

em\_estpl3: em\_estpl4:

em\_estpl2

em\_estpl1

em\_estro4: em\_estro5: em\_estro6:

em\_estro7

em\_estro3

em\_estro19:\*
em\_estro20:\*
gb\_est25:\*

gb\_est26: gb\_est27: gb\_est28: gb\_est29:

gb\_est30: gb\_est31: gb\_est41: gb\_est41: gb\_est42: gb\_est43: gb\_est44:

gb\_est45: gb\_est46: gb\_est47:

em\_estro8:\*
em\_estro10:\*
em\_estro10:\*
em\_estro11:\*
em\_estro12:\*
em\_estro12:\*
em\_estro12:\*
em\_estro13:\*
em\_estro13:\*
em\_estro16:\*
em\_estro16:\*
em\_estro16:\*
em\_estro17:\*
em\_estro17:\*

|  |   | results predicted by chance to have a<br>L to the score of the result being printed,<br>of the total score distribution. | Description A2305110 1M0005F A1712497 UI-FART A205131 RPCI-23 A2027551 RPCI-23 A202751 RPCI-23 A2027610 WHE2201 BE592210 WHE2201 A2001086 CIT-HSF BE59221 AV387571 BE59806 WHE0965 AV387571 AV387571 BE59806 UI-BT2 A1746678 U106605 BC560311 6023714 A1209519 b0607314  |
|--|---|--|---|
|  | 205: 99-9ss5:* 206: 99-9ss5:* 207: 99-9ss5:* 208: 99-9ss5:** 209: 99-9ss7:* 210: 99-9ss10:* 211: 99-9ss11:* 213: 99-9ss11:* 214: 99-9ss11:* 215: 99-9ss11:* 216: 99-9ss11:* 217: 99-9ss11:* 221: 99-9ss11:* 222: 99-9ss21:* 223: 99-9ss21:* 224: 99-9ss22:* 225: 99-9ss22:* 226: 99-9ss26:* 227: 99-9ss26:* 227: 99-9ss26:* 228: 99-9ss26:* 228: 99-9ss26:* 229: 99-9ss26:* 229: 99-9ss26:* 229: 99-9ss26:* 229: 99-9ss26:* | gb_gss30:* gb_gss31:* gb_gss33:* gb_gss34:* gb_gss34:* the number of than or equal                                       | Result Query  No. Score Match Length DB ID  1 43.4 11.1 581 219 A2305110 2 40 10.3 463 219 A2205511 3 9 10.0 521 215 A2021511 4 3.8 9.7 994 231 CNS6402X 5 36.8 9.4 576 141 BE97816 7 36.6 9.4 329 146 BE592216 7 36.4 9.3 277 137 BE59326 C 9 36.4 9.3 277 137 BE59326 C 10 36.4 9.3 277 166 BE39586 C 11 35.6 9.1 230 167 BE48968 C 12 35.6 9.1 1070 136 BE556034 C 14 35.2 9.0 177 103 A1909438 C 15 35.2 9.0 570 24 A1746678 C 17 35.9 9.0 359 17 A1209519  |
|  |   |  | •   |
|  |   |  |   |
|  |   |  |   |
|  |   |  |   |
|  |   |  |   |
|  |   |  |   |
| 90-est48:* 90-est50:* 90-est50:* 90-est51:* 90-est51:* 90-est55:* 90-est56:* 90-est56:* 90-est67:* 90-est60:* 90-est60:* | 99b_est63:* 99b_est66:** 99b_est66:** 99b_est76:** 99b_est777:** 99b_est80:** 99b_est80:** 99b_est80:** 99b_est80:** 99b_est80:** 99b_est80:** 99b_est80:** 99b_est80:**  | gb_est104:* gb_est105:* gb_est106:* gb_est67:* gb_est68:* gb_est69:* gb_est71:*  | 9b_est73:* 9b_est74:* 9b_est91:* 9b_est92:* 9b_est93:* 9b_est93:* 9b_est96:* 9b_est96:* 9b_est96:* 9b_est96:* 9b_est96:* 9b_est96:* 9c_est96:* |

AZ305110 1M0005P05 AI712497 UI-R-AF1-AZ027551 RPCI-23-1 AZ027551 RPCI-23-3 AL300678 Tetraodon BE907816 601501924 BE593226 WSL\_99\_B0 AQ001086 CIT-HSP-2 BE57229 DGL\_147\_B BE57229 DGL\_147\_B BE35729 DGL\_147\_B BE35729 DGL\_147\_B BE35729 BCI-HSP-2 BE35729 BCI-HSP-2 BE356034 601062471 AI909438 IL-BT208-1 AI746678 U106D55.y BG266311 602371427 AI209519 D060731 1427

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                  573 GGCCCGGTG 581
                                                                                                                                                                                                                                                                                                                               61 agccctgtg 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97044477
                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                          AI712497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                           op
                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                             AL207789 Terraodon
BE88988 0155140
BF606532 273595 MA
BE704628 SC02_03b0
BE414190 SS0004F06
BE414190 SC0007.C0
BE216356 HV_CE001
BF685554 602140603
AL522415 AL522415
AQ780112 HS_3169_A
                                                  AW475303 un64b04.ÿ
BF143884 601791238
BF622277 HVSNEa000
BE032541 131940 MA
BE032543 131942 MA
AU066538 AU066538
BF620464 HVSNEC001
                   AA880435 vw89f07.r
AU075583 AU075583
AW318852 un08d12.y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \Gamma
                                                                                                                                           BE363650 WS1_64_G1
BE361027 DG1_69_A0
                                                                                                                       AF034173 AF034173
BE127683 DEPA1432
                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (Dases 1 to 581)
Dunn, D., Aoyagi, A., Barber, M., Beacorn, T., Duval, B., Hamil, C., Islam, H., Longacre, S., Mahmoud, M., Meenen, E., Pedersen, T., Reilly, M., Rose, M., Rose, R., Stokes, R., Tingey, A., von Niederhausern, A. and Wright, D., Weiss, R.
                                                                                                                                                                                                                                                                                                                                                        IMO005P05R Mouse 10kb plasmid UUGC1M library Mus musculus genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SI'C'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mouse whole genome scaffolding with paired end reads from 10kb plasmid inserts
Unpublished (2000)
Contact: Robert B. Weiss
University of Utah Genome Center
University of Utah
Rm. 308, Blomedical Polymers Research Bldg., 20 S. 2030 E., SLC. 84112, USA
                                                                                                                                                                                                                                                                                                                                                  29-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="uUGCIM0005P05"
/clone_llb="Mouse 10kb plasmid UUGCIM library"
/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84112, u.s.
Tel: 801 585 5606
Fax: 801 585 7177
Email: ddunn@genetics.utah.edu
                                                                                                                                                                                                                                                                                                                                                              clone UUGC1M0005P05 R, DNA sequence. AZ305110
                                                                                                                                                                                                                                                                                                 ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ce: 0005 row: P column: 05 primer: CACACAGGAAACAGCTATGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .581
/organism="Mus musculus"
                                                                                                                                          BE363650
BE361027
CNS02PBO
BE88988
BF606532
                                                                                                                                                                                            BE704828
BE402120
BE414190
                                                                                                                                                                                                                                              AL522415
BG112663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence stop: 581.
                                                                                                                                 BE127683
                                                                                                                                                                                                                         BE216356
                                                                                                                                                                                                                                                                  AQ780112
                                                            BF143984
                                                                                                              BF620464
                                                                                                                                                                                                                                     BF685554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                         AZ305110.1 GI:10341800
                                                                                                                                                                                 150
138
166
166
164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Insert Length: 10000
Plate: 0005 row: P
                                                                                                   106
                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                  581 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Class: plasmid ends
                            house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                  AZ305110
source
                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                             RESULT
AZ305110
                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
```

υ

ပ

```
(http://www.jax.org/resources/documents/dnares/). The DNA was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with T4 DNA polymerase and T4 polynucleotide kinase. Adaptor oligonucleotides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pMP42 (gil4732114/gblAR129072.1), a copy number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared adaptored mouse DNA was annealed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: msoares@blue.weeg.ulowa.edu
Oligo-dT track not found, Not I site shown in beginning of sequence
is likely internal to the message. cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
Seq primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         adaptored vector DNA, and transformed into chemically-competent E. coll XL10-Gold (Stratagene) cells and selected for ampicillin resistance. The selected of the selected selected the selected selected the selected sele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
/lab_host="E. Coli strain XLIO-Gold, T1-resistant, F-" /note="Vector: PWD42Nv; Purified genomic DNA from M. musculus C57BL/63 (male) was obtained from the Jackson Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 463)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AI712497 463 bp mRNA EST 08-JUN-1999 UI-R-AFI-aap-b-12-0-UI.sl UI-R-AFI Rattus norvegicus cDNA clone UI-R-AFI-aap-b-12-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
451 Exstein Medical Research Building Iowa City, IA 52242, USA
Tel: 319 335 9256
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.1%; Score 43.4; DB 219; Length 581; 76.8%; Pred. No. 0.098; ive 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /strain="Sprague-Dawley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AI712497
AI712497.1 GI:5016297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Norway rat.
Rattus norvegicus
```

```
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  house mouse.
                                                                                                                                                                                                              129
                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
DEFINITION
                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AZ027551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                      /lab_host="ballow (Life Technologies)"
/lab_host="ballow (Life Technologies)"
/note="Vector: p773D-pac (Pharmacia) with a modified
/note="Vector: p773D-pac (Pharmacia) with a modified
polyllnker; Site_1: Not I; Site_2: Eco RI; The UI-R-AFI
library is a normalized library constructed from 15 dpc
rat atrioventricular (AV) canal. The tag is a string of 5
nucleotides present between the Not I site and the
oligo-dT track. The library was constructed as described
by Bonaldo, Lennon and Soares, Genome Research 6: 791-806
/ 1996. Tissue provided by Jim Lin, Department of Biology,
UNIVERSITY of Iowa.
                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A2261971 477 bp DNA GSS 26-JUL-2000
RPCI-23-123P23.TV RPCI-23 Mus musculus genomic clone RPCI-23-123P23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 (bases 1 to 477)
Lahao, S., Naterman, W., Feldblyum, T., Malek, J., Shatsman, S., Akinret, B., Levins, M., Mcgann, S., Tsegaye, G., Geer, K., Krol, M., de Jong, P., and Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255 TGATTGCTGTCCCACCACCAGTTTTCTGACCTTCATGATCCCTATGACTTCTTCCCTGC 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                              tcattgctctcacctgcctcggtggccttgcctccccgagccctgtgactccctcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccetcaaggagetcattgaggagetggtcaacatcaeccagaatcaggeateectetgea
                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                         Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
712: 301 838 0208
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                          50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mouse BAC End Sequences from Library RPCI-23
Unpublished (1999)
Other_GSSs: RPCI-23-123P23.TJ
                /clone="UI-R-AF1-aap-b-12-0-UI"
                                                                                                                                                                                                                                                                                                                                                                     DB 24;
                                                                                                                                                                                                                                                                 TAG_SEQ-GAAGG"
                                                                                                                                                                                                                                                                                                                                                                         Score 40; DB 24
Pred. No. 0.83;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
/db_xref="taxon:10116"
                                  /clone_lib="UI-R-AF1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                     92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AZ261971.1 GI:9470858
                                                                                                                                                                                                                                                                                                                                                                         10.3%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , DNA sequence.
AZ261971
                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
les 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  house mouse.
                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                            23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AZ261971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
```

```
/note-"Organ: Kidney/Brain; Vector: pBACe3.6; Site_1:
ECORI; Site_2: ECORI; Female C57BL/6J mouse kidney and/or
brain genomic DNA was isolated and partially digested
with a combination of EcoRI and EcoRI methylase. Size
selected DNA was cloned into the pBACe3.6 vector at the
ECORI sites. The ligation products were transformed into
DH10B electrocompetent cells (BRL Life Technologies).

121 c 113 g 114 t.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          · ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A2027551 521 bp DNA GSS 25-FEB-2000
RPCI-23-343M24.TJ RPCI-23 Mus musculus genomic clone RPCI-23-343M24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zhaò,S., Nierman,W., Feldblyum,T., Malek,J., Shatsman,S., Akinret,B., Levins,M., Mcgann,S., Tsegaye,G., Geer,K., Krol,M., de Jong,P. and Fraser,C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BACPAC Resources (http://Dacpac.med.buffalo.edu/orderingframe.htm) or from Resea ch Genetics (info@resgen.com). BAC end page: http://www.tigr.org/tdb/Dac_ends/mouse/bac_end_intro.html plate: 343 row: M column: 24 Seq primer: SP6 Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 521)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: szhao@tigr.org
Clones are derived from the mouse BAC library RPCI-23. For BAC
library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   333 ATGGCAGCTGGAGTACTGGGATAGACAGTGGGGACAACTGAGAAACACTGTGGTCACAAA 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155 tgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatg 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  273 TGGCTAGCTTCAGTCACATGGTCAGACTGGACTGAGGTGATTGGATCATTCTGAATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215 tetecgaetgeagegecatecaaaggaeecagaggatgetgaaageaetgtgeteteaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
The Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    275 agcccgcggcagggatttccagtgaacgcagccgagacaccaaaatt 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mouse BAC End Sequences from Library RPCI-23
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 39; DB 218;
Pred. No. 1.6;
0; Mismatches 80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
/clone="RPCI-23-123P23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="RPC1-23-343M24"
                      /clone_lib="RPCI-23"
/sex="Female"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AZ027551.1 GI:7102935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.0%;
52.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA sequence.
```

```
σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  108
                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                           87;
                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                            COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                             Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                       14
                                                                                                                                                                                                                                                                                                74
                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
BE907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                            BASE
                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                            δ
                      /Sex="remale"
/lab_host="DH10B"
/lab_host="DH10B"
/note="Organ: Kidney/Brain; Vector: pBACe3.6; Site_1:
ECORI; Site_2: ECORI; Female C57BL/6J mouse kidney and/or
brain genomic DNA was isolated and partially digested
with a combination of EcoRI and EcoRI Methylase. Size
selected DNA was cloned into the pBACe3.6 vector at the
ECORI sites. The ligation products were transformed into
DH10B electrocompetent cells (BRL Life Technologies). "
'``.'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a large
scale clone-end sequencing project of the Tetraodon nigroviridis
genome. For more information, please take a look at
http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 994)
cost-Crollius,H., Jaillon,O., Dasilva,C., Bouneau,L., Fisher,C.,
Bernot,A., Fizames,C., Wincker,P., Brottier,P., Quetier,F.,
Saurli,W. and Welssenbach,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fisher, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNSO402X 994 bp DNA GSS 25-MAY-2000 Tetraodon nigroviridis genome survey sequence T7 end of clone 125F09 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actinopterygil; Neopterygil; Teleostel; Euteleostel; Neoteleostel
Eurypterygil; Ctenosquamata; Acanthomorpha; Euacanthomorpha;
Holacanthopterygil; Acanthopterygil; Percomorpha;
Tetraodontiformes; Tetraodontoidel; Tetraodontidae; Tetraodon.
1 (bases 1 to 994)
Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, C.
Bouncau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                            tgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatg 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       337 ATGCCAGCTGGAGCGTACTGGGATAGACAGTGGGACAACTGAGAACACTGTGGTCACAAA 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Charaterization and repeat analysis of the compact genome of freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                             Length 521;
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 397 AGCTAGCAGTCTGTCTTGCCTGAGATGGCAGTCTGCATATCCTGATT 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275 agcccgcggcagggatttccagtgaacgcagccgagacaccaaaatt 321
                                                                                                                                                                                                                                                                                                                80;
                                                                                                                                                                                                                                                                             215;
                                                                                                                                                                                                                                                                         Score 39; DB 2
Pred. No. 1.6;
0; Mismatches
/clone_lib="RPCI-23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS; genome survey sequence.
Tetraodon nigroviridis.
Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL300678.1 GI:8177652
                                                                                                                                                                                                                                                                         10.0%;
52.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 994)
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submission
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence.
AL300678
                                                                                                                                                                                                 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct
                                                                                                                                                                                                                                                                                                                87;
                                                                                                                                                                                                                                                                         Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNS040ZX/c
                                                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

/organism="Tetraodon nigroviridis" /db\_xref="taxon:99883"

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="epithelioid carcinoma"
/tissue_type="epithelioid carcinoma"
/tab_host="buld08 (phage-resistant).
/hote="Organ: pancreas; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sal1; Cloned unidirectionally; Primer: Oligo dT. Site_2: Sal1; noset size 1.1 kb. Library constructed by Life Technologies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                sequence ID : COBG125CC05LP1~end : T7" g 174 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE907816 576 bp mRNA EST 20-OCT-2000 601501924F1 NIH_MGC_70 Homo sapiens CDNA clone IMAGE:3903965 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                         244 TGGCTGTGCTCTTTCTTCCATCGGGACAACAAGGCCTTCGCTGCCCTCCTCACGCCGACC 185
                                                                                                                                                                                                                                                                                                                                                                                            cctccccaaccctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcat 133
                                                                                                                                                                                                                                                                                                                                                                                                                                               184 TCGGGCCAAGTCTTCAGGAGTCTGTAGAGGACCTTGACCACATCTGTCATCTCCAGCTGC 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 576)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                            tgactgtggtcattgctctcacctgcctcggtggccttgcctccccgagccctgtgactc 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gooteggtggcottgcctccccgagccctgtgactccctccccaacctcaaggagctca 97
                                                                                                                                                                                                                                         ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                         Length 994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coctotycaacygcaycatgytytygaycytcaacctgaccyccygcat 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTGCTGTGTGGCAGCCTTGTCAAGATCACCGAGCAGCAGGAAAT 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 36.8; DB 141; Length
Pred. No. 6.9;
); Mismatches 112; Indels
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                      DB 231;
                                                                                                                                                                                                                                      82;
                                                                                                                                                                                 Score 37.8; DB Pred. No. 4.2; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plate: LLAM9708 row: o column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="IMAGE:3903965"
/clone_lib="NIH_MGC_70"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence stop: 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
/clone="125F09"
/clone_lib="G"
/note="Genoscope s
a 295 c 325 g
                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE907816.1 GI:10401759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rechnologies.
174 c
                                                                                                                                                                                 9.7%;
ilarity 51.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 9.4%;
Best Local Similarity 48.1%;
Matches 104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BE907816
                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
```

```
Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loca
Matches
                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
BE593226
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                             à
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                               ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_"WHE2208_A08_B16"
/clone_"WHE2208_A08_B16"
/clone_"Lip="Ancher"
/tissue_type="Ancher"
/dev_stage="Premeiotic anthers"
/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 329)
Akhunov,E., Anderson,O.D., Chao,S., Chin,A., Choi,D.W., Close,T.J., Fenton,R.D. Han,P.S., Hsia,C.C., Kang,Y., Kianian,P., Lazo,G.R., Miller,R., Otto,C., Rausch,C.J., Seaton,C.L., Simons,K., Tong,J.C. and Zhang,D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US Department of Agriculture, Agriculture Research Service, Pacific West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophyta,
Magnollophyta; Lillopsida, Poales, Poaceae, Pooideae, Triticeae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF292210 329 bp mRNA EST 17-NOV-2000 WHE2208_A08_B16ZS Aegilops speltoides anther cDNA library Aegilops speltoides cDNA clone WHE2208_A08_B16, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Regilops speltoides"
/cultivar="F2 from 2-12-4-8-1-1-1-(1) x PI36909-12-811-(1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The structure and function of the expressed portion of the wheat genomes - Anther CDNA library from Aegilops speltoides
224 GACTTGATGTCCATGAGCCGCTGGTACTCCTGATTCTGCCGCTCACTATCAGCTCGCACA 283
                                                                                                                                                                                                                                                                                   284 TCGCCCAGCTGGGCTTCAATACCGCTGATCAGCGCCTGGTATTATTGCGCCCAGTTGGGCT 343
                                                                                                                                                                                                                                            158 ggagcgicaacctgaccgccggcaigtactgcgcagcictagaaictctgaicaaigict 217
                                                                                                      98 ttgaggagctggtcaacatcacccagaatcaggcatccctctgcaacggcagcatggtgt 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence have been trimmed to remove vector sequence and low quality sequence with phred score less than 20
                                                                                                                                                                                                                                                                                                                                                                                                                          404 GTGACTGCAGCTCAATCTCAAGACCCTGAAGGGTGC 439
                                                                                                                                                                                                                                                                                                                                                                               218 ccgactgcagcgccatccaaaggacccagaggatgc 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq primer: Stratagene SK primer.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:4573"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fax: 5105595818
Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF292210.1 GI:11223274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
Contact: Olin Anderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aegilops speltoides.
Aegilops speltoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aegilops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
BF292210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                      요
                                      요
                                                                                               ò
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                           q
```

```
/organism="Sorghum bicolor"
/organism="Laxon:4558"
/db_xref="Laxon:4558"
/dlone_lib="Water-stressed 1 (WS1)"
/clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld; Vector: Lambda Zap; Site_1: XhoI; Site_2: EcorR; The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were prepared by mass excision."
a 81 c 78 g 71 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                    BE593226 277 bp mRNA EST 18-AUG-2000 WS1_99_B03.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence.
BES93226
                                                                                                                                                                                   80 caaccetcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatcetet 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84 cctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgcaa 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 203
                                                                                                                                     158 resecareterecerresterasaasareareseceasartresssaceraetree 217
                                                   Gaps
                                                                                        Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                         ;
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 137; Length 277;
    Length 329;
                                                                                                                                                                                                                                                                            140 gcaacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcg 190
                                                                                                                                                                                                                                                                                                      An EST database from Sorghum: water-stressed plants
                                                 Indels
    DB 146;
                                                 84;
  Score 36.6; DB
Pred. No. 6.9;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 36.4; D
Pred. No. 7.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 5
High quality sequence stop: 246
POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE593226.1 GI:9848299
9.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.3%;
ilarity 53.5%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 277
                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorghum bicolor
                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47
                                            87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
BE498968
LOCUS
DEFINITION
                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144
                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                    BE357229
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                        COMMENT
                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 411)
S Adams, M.D., Rounsley, S.D., Zhao, S., Field, C.E., Bass, S., Linher, K., Golden, K., Berry, K., Granger, D., Suh, E., Wible, C., Shizuya, H., Simon, M., and Venter, J.C.
Use of a random BAC End Sequence Database for Sequence-Ready Map Building (1998)
Contact: Mark Adams
Department of Eukaryotic Genomics
The Institute for Genomic Research 9712 Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0200
Fax: 301 838 0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó
                                                                                                                                                   AQ001086 411 bp DNA GSS 26-JUN-1998
CIT-HSP-2288N10.TR CIT-HSP Homo sapiens genomic clone 2288N10, DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mdadams@tigr.org
Clones are available from Research Genetics (info@resgen.com). BAC
end search page:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://www.tigr.org/tdb/humgen/bac_end_search/bac_end_search.html
Seg primer: Mi3 Reverse
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89 aggageteattgaggagetggteaacateacecagaateaggeatecetetgeaacggea 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149 gcatggtggagggtcaacctgaccgccggcatgtactgcgcagctctagaatctctga 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCTGAGGGGTCTGTCATGATCACGTCCCGCCTCTTTTTCTGCTCAGTAATCTCACA 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         227 CCCAGACTGGGGTCCTGGTGGGGCTGGGGGCCACATGGGGTCCTGAAAGGGCAGGGCTG 168
82 CGACGCCGCCGAGTGGGTCAACGCCCAGGTCATCCGCGCCCAACGGCGGCGTACGTGTGATG 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cell_type="Sperm"
/note="Vector: pBeloBAC11; Site_1: HindIII; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.3%; Score 36.4; DB 201; Length 411;
48.5%; Pred. No. 8.3;
Live 0; Mismatches 106; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="GDB:7150045"
/db_xref="taxon:9606"
/clone="2288N10"
/clone_lib="CIT-HSP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           teaatgteteegaetgeagegeeate 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTTTTTAAAAGAATCCACTTC 82
                                  204 tctgatcaatgtctccgactgc 225
                                                     AQ001086
AQ001086.1 GI:3028525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 100; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "IIIpuiH
                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                    AQ001086/c
                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                      TITLE
 9
                                  ò
                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
```

```
Eukarymana.

Eukarymana.

Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

(bases 1 to 537)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. :37.

/ Organism="Sorghum bicolor"
/ Organism="Sorghum bicolor"
/ Obser="Laxon:4558"
/ Chone_lib="taxon:4558"
/ Chone_lib="taxon:5-day-old dark-grown seedlings; Vector:
/ Chambad Zapp: Site_l: XhoI: Site_2: EcoRi: The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 160 c 176 g 112 t
                                                                                                                                                                                                                                                                                                              Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
is 20.
BE357229 537 bp mRNA EST 20-JUL-2000
DG1_147_B02.g1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE498968 230 bp mRNA EST 04-AUG-2000 WHE0969_G06_N112S Wheat pre-anthesis spike cDNA library Triticum estivum cDNA clone WHE0969_G06_N11, mRNA sequence.
BE498968 GI:9697585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Cordonier-Pratt MM
Contact: Cordonier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84 ceteaaggageteattgaggagetggteaacateacecagaateaggeatecetetgeaa 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    eggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309 cgacccccccagreggreaacgcccaggrearcccccccaacgccgcracgrearg 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                      An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.3%; Score 36.4; DB 166;
ilarity 53.5%; Pred. No. 8.8;
Conservative 0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence start: 31
High quality sequence stop: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     204 tctgatcaatgtctccgactgc 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:9298786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bread wheat.
Triticum aestivum
                                                                                                                                                                                    Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 76; Conserva
                                                                                                      BE357229.1
                                                        sednence
                                                                                BE357229
                                                                                                                                                            sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
```

us-09-451-527-102.rst

```
62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
BE536034/c
                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                             JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
 REFERENCE
                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                FEATURES
                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                         US Department of Agriculture, Agriculture Research Service, Pacific
Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophyta,
Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="wheat pre-anthesis spike cDNA library"
/tissue_type="Spike before anthesis"
/dev_stage="Adult plant"
/lab_host="E. coli SOLM"
/lab_host="E. coli SOLM"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_l: EcoRI; Site=2: Xhol; Plants were grown in the
greenhouse. Whole spike with awns trimmed, white, green
and yellow anther were collected and total RNA, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               poly(A) RNA were prepared, a cDNA library was made, and the cDNA clones were in vivo excised to give pBluescript phagemids in the TJ Close lab (Choi, Close, Fenton) at the University of California, Riverside. Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chlamydomonas reinhardtii
Eukaryota, Viridiplantae, Chlorophyta, Chlorophyceae, Volvocales,
                                                                    Anderson, O.D., Chao, S., Choi, D.W., Close, T.J., Fenton, R.D., Han, P.S., Hsla, C.C., Kang, Y., Lazo, G.R., Miller, R., Rausch, C.J., Seaton, C.L. and Tong, J.C.
The structure and function of the expressed portion of the wheat genomes - Pre-anthesis spike cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AV387571 537 bp mRNA EST 29-SEP-2000 AV387571 Chlamydomonas reinhardtii C9 Chlamydomonas reinhardtii c9 cbNa clone CM026e03_r, mRNA sequence. AV387571 GI:6541787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80 caaccctcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatcctct 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 TCGCCATCTCTCTCCCCTTCGTCCAGAAGATCATCGCCGAGATTTTCGGGACCTACTTCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence have been trimmed to remove vector sequence and low quality sequence with phred score less than 20 Seq primer: Stratagene SK primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         West Area, Western Regional Research Center.
800 Buchanan Street, Albany, CA 94710, USA
TTEL: 510559573
Fax: 5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84;
                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Triticum aestivum'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 35.6; DE
Pred. No. 12;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                  /cultivar="Chinese Spring"
/db_xref="taxon:4565"
/clone="WHE0969_G06_N11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74 9
                                                                                                                                                                                                                                                                                                       Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chlamydomonas reinhardtii.
                                                                                                                                                                    Unpublished (2000)
Contact: Olin Anderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.18;
                                                        (bases 1 to 230)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best_Local Similarity
Matches 86; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AV387571/C
                                                        REFERENCE
                                                                            AUTHORS
                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                 TITLE
                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           БÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
ö
                                                                                                                                                                                                                             The First Laboratory for Plant Gene Research Kazusa DNA Research Institute Yana 1532-3, Kisarazu, Chiba 292-0812, Japan. Email: ynakamu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_llb="Chlamydomonas reinhardtii C9"
/clone_llb="Chlamydomonas reinhardtii C9"
/dev_stage="photoautotrophic growth"
/note="Vector: pBluescriptII SK-; Site_1: EcoRI; Site_2:
                                                                           green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1070)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE536034 1070 bp mRNA EST 09-AUG-2000 601062471F1 NIH_MGC_10 Homo sapiens cDNA clone IMAGE:3448912 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         geettgeetcoecegageeetgtgaeteeeteecaaeeeteaaggageteattgaggage 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107 tggtcaacatcacccagaatcaggcatccttgcaacggcagcatggtggtggagcgtca 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437 AGTICGACAICAAGCICAIGGAGGIGCACGGIGACIACAGCGAGGAGGIGGGCGCCA 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgca 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           497 GCCAGGCATCACCCCCTGCAGACACTTCATCCGCAAGTTGAAGGTGCTGAAGGCGCCCCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
A large scale structural analysis of cDNAs in a unicellular alga, Chlamydomonas reinhardtii. I. Generation of 3433 DNA Res. 6 (6), 369-373 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
Trissue Procurement: ATCC
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Incyte Genomics, Inc.
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATCGAGCGCCCCCCCCCCCCCCCCCCCCCTCGAGGCGCCCCCCACCCCCTAAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227 gegecatecaaaggaececagaggatgetgaaageaetgtgeteteaaaageeeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                /organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 35.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:3055"
/clone="CM026e03_r"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      166 g
                                                                                                                                                                                                       Contact: Yasukazu Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE536034.1 GI:9764679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.18;
                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      220 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA sequence.
BE536034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Iodx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
```

```
26
                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
AI746678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                     òγ
                                                                 1. .1070

/ Organism="Homo sapiens"

/ Organism="Homo sapiens"

/ Clone="TMAGE:348912"

/ Clone="In="MCG"="MCG_10"

/ Cell_line="MCG_36"

/ Lab_host="MCG_36"

/ Tab_host="DH108"

/ Note="Crgan: cervix; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: Sall; cloned unidirectionally. Primer: Oligo dT. Average insert size 1.5 kb. Library prepared by Life Technologies: "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 177)
Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagal, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/seq/gethtml.pl?tl=IL&t2=IL-BT208-007.html &t3=080499&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                     108 ggtcaacatcacccagaatcaggcatcctttgcaacggcagcatggtggtggagcgtcaa 167
                                                                                                                                                                                                                                                                                                                                                                                                                                48 ccttgcctccccgagccctgtgactccctcccaaccctcaaggagctcattgaggagct 107
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A1909438 .177 bp mRNA EST 30-MAR-20
IL-BT108-080499-007 BT208 Homo sapiens CDNA, mRNA sequence.
A1909438.1 GI:6500118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                   9.18; Score 35.6; DB 136; Length 1070; 55.78; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence tags
Proc. Natl. Acad. Scl. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                           54;
                                                                                                                                                                                                                                                                                311 t
                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 18;
0; Mismatches
column: 17
               High quality sequence start: 3
High quality sequence stop: 5.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: asimpson@ludwig.org.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: puc 18 forward.
Location/Qualifiers
                                                                                                                                                                                                                                                                              315 g
Plate: LLAM8424 row: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: +55-11-2704922
Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                           68; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               168 cc 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TC 926
                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                          Best Local
Matches 6
                                                                          Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
AI909438/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
/dev_steme=_Adult."
//dev_steme=_Adult."
//dev_steme=_Adult."
//note=_Norgan: breast; Vector: pucl8; Site_1: SmaI; Site_2:
SmaI; A mini-library was made by cloning products derived
from ONESTES PCR (U.S. Letters Patent application No. 196
//16 - Ludwig Institute for Cancer Research) profiles
into the pUC 18 vector. Reverse transcription of tissue
mRNA and cDNA amplification were performed under low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AI746678 570 bp mRNA EST 22-JUN-1999 ul06b05.yl Sugano mouse kidney mkia Mus musculus CDNA clone IMAGE:2065233 5' similar to gb:D00015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); gb:M13685 Mouse prion protein (MOUSE);, mRNA sequence. AI746678.1 GI:5124942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mammalia; Buteleostomi;
Mammalia; Eutheria: Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases I to 570)
Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T.,
Morray, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T.,
B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R.,
Waterston, R. and Wilson, R.
The WashU-NCI Mouse EST Project 1999
Conpublished (1999)
Contact: Marra MyMashU-NCI Mouse EST Project 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This clone is available royalty-free through LLNL , contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 gaggagetggtcaacateacecagaateaggcateeetetgcaaeggcageatggtggg 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           166 CICCCIAACCAAGIGIACIACAGGCCAGIGGAICAGIACAGCAACCAGAACAACAICGIG 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106 CACGACTGCGTCAATATCACCATCAAGCAGCACAGGGGGGG 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /strain="C57BL"
/db_xref="taxon:10090"
/clone="IMAGE:206233"
/clone=lib="Sugano mouse kidney mkia"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 35.2; DB 103;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68;
                                                                                                                                                                                                                                                                                                                                                      51 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="BT208"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                           stringency conditions."
46 c 54 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence stop: 283.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: custom primer used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160 agcgtcaacctgaccgccggcatg 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46 AACTICACCGAGACCGATGTGAAG 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                            9.0%;
                                                                                       /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGI:994421
```

```
/dev_stage="adult"
  /lab_host-"DH10B"
                                           140
                                           BASE COUNT
ORIGIN
```

ö Gaps . 0 DB 24; Length 570; Indels 84; Query Match 9.0%; Score 35.2; D Best Local Similarity 50.3%; Pred. No. 19; Matches 85; Conservative 0; Mismatches

88 aaggageteattgaggagetggteacateaceeagaateaggeateeetetgeaaegge 147

q ò a ò

à

Search completed: May 13, 2001, 11:40:52 Job time: 16527 sec

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377
230.8
230.8
230.8
229.2
229.2
229.2
203.8
188
188
187.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          May 13, 2001, 14:25:11 ; Search time 9342.78 Seconds (without alignments) 615.627 Million cell updates/sec
                                                                                                                     1 atggcgctctggttgactgt........atcgccatggaaatttcaga 390
                                                                                                                                                                                           2566470
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                     1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                      OM nucleic - nucleic search, using sw model
                                                                                                                                        IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_inv1:*
em_htg_inv2:*
em_htg_other:*
em_htg_rod:*
em_hum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_fun:*
em_htgo_hum:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_htgo_rod:*
em_htg_hum1:*
em_htg_hum2:*
em_htg_hum3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htg_hum6:*
em_htg_hum7:*
em_htg_hum8:*
                                                                                             US-09-451-527-102
390
                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_htg_hum4:
em_htg_hum5:
                                                                                                                                                                                                                                                                                                                                                                                      gb_pat2:*
gb_ph:*
gb_pl1:*
gb_pl2:*
gb_pl3:*
gb_pl4:*
em_ba1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_hum3:*
em_hum4:*
em_hum5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_hum6:*
em_hum7:*
em_in:*
em_om:*
                                                                                                                                                                                                                                                                                                                                              gb_in3:*
gb_om:*
gb_ov:*
gb_ov:*
                                                                                                                                                                                                                                                                                             gb_ba1:*
gb_ba2:*
                                                                                                                                                                                                                                                                                                                            gb_in1:*
gb_in2:*
                                                                                                                                                                                                                                                                                                                 gb_ba3:*
                                                                                                                                                                                                                                                                                    GenEmb1:*
                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                         Scoring table:
```

9b\_htg13::\*
9b\_htg14::\*
9b\_htg16::\*
9b\_htg16::\*
9b\_htg18::\*
9b\_htg18::\*
9b\_htg20::\*
9b\_htg21::\*

gb\_htg24:\* gb\_htg25:\*

gb\_pr1:\* gb\_pr2:\* gb\_pr4:\*

gb\_pr3:\*

9b\_pr5: 9b\_pr6: 9b\_pr7:\*\* 9b\_pr9:\*\* 9b\_r01:\*

gb\_htg10:\* gb\_htg11:\* gb\_htg12:\*

9b\_htg2: 9b\_htg4: 9b\_htg4: 9b\_htg6: 9b\_htg6: 9b\_htg6: 9b\_htg9: 9b\_htg9:

9b\_sts1:\*
9b\_sts2:\*
9b\_sts3:\*
9b\_sy:\*
9b\_un:\*
9b\_vi1:\*
9b\_vi2:\*

Sequence:

Run on:

Searched:

Database

em\_pl:\* em\_ro:\* em\_sts:\*

em\_sy:\* em\_un:\* em\_vi:\*

em\_ov:\* em\_pat:\*

L06801 Homo sapiens 1 134548 Sequence 1 AF04344 Homo sapi A29948 Coding sequence 15 AF072807 Bos tauru A29950 Nucleic aci 158489 Sequence 17 A29931 Sequence Co

AF244915 HUMIL13A HSNG30 I34548 AF043334 A29948 I58488 AF072807 A29950 I58489 A29931

933

417 1297 1297 343 384 384 336

559. 578. 588. 588.

AF244915 Canis fam

Description

ID

DB

Length 1302

Query Match

SUMMARIES

187.4 1186.2 1186.2 1186.2 1186.2 1186.3 1186.8 1188.6 1198.6 1198.6 1199.8 1101.8 1101.8 1101.8 1101.8 1101.8 1101.8 1101.8 1101.8

```
/product="interleukin 13"
/protein_id="AAA36107.1"
/protein_id="AAA36107.1"
/protein_id="Interleukin"
/product="interleukin"
/protein_id="Interleukin"
/pro
                                                                                                                                                                                             1;
          SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bukaryoptens
Bukaryoptens
Bukaryoptens
Mammalia; Butherla; Primates; Catarrhini; Hominidae; Homo.

Hobses 1 to 1270)

McKenzie, A. N. J., Culpepper, J. A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G.; Menon, S., de Vies, J. E., Banchereau, J. and Zurawski, G. R.

Interleukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function

Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                   agcoctgtgactcctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                           112 AGCCCTGTGACTCCCTCCCCAACCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                     Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cytokine; growth factor; interleukin 13; regulatory Homo sapiens CDNA to mRNA. Homo sapiens
                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
L06801
                                                                                                                                                   Score 377; DB 7;
Pred. No. 3.4e-86;
0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HVRDTKIEVAQFVKDLLLHLKKLFREGRFN
                             SRDTKIEVIQLVKNLLTYVRGVYRHGNFR
                                                                     u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              358 gtaaggggagtttatcgccatggaaatttcaga 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                     Б
                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45. .443
/codon_start=1
                                                                                                                                                     96.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L06801.1 GI:186275
                                                                     O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335 c
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .1270
                                                    448.
                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93234572
                                                                     337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                288
                                                                                                                                                                                           390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_site.
BASE COUNT
                                                                                                                                                   Query Match
Best Local S:
Matches 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                3'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HUMIL13A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                    ORIGIN
                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                         염
                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                              AF276990 Canis fam
L42080 Homo sapien
L13029 Human inter
U10307 Human inter
U31120 Human inter
AC014127 Homo sapi
AC074127 Homo sapi
AC074127 Homo sapi
AL2079 Homo sapien
L13028 Mouse inter
AC084922 Homo sapien
AC005742 Mus muscu
AC005742 Mus muscu
                                                                                                                            A29930 Sequence co
I58481 Sequence 2
I58495 Sequence 26
M23504 Mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="GI:7528274"
/translation="MALMLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         I58485 Sequence 12
A29939 Sequence co
                                                                                                                                                                                                            I34549 Sequence 3
L26913 Rattus Norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158483 Sequence 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M33952 Rat neurona
U42976 Rattus norv
      I58494 Sequence 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
                                   I86198 Sequence 4
A52326 Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases 1 to 1302)
Yang, S., Boroughs, K.L. and McDermott, M.J. Canine interleukin-13; molecular cloning of full-length cDNA and expression of biologically active recombinant protein
                                                                                                           I86195 Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL359215 Streptomy
A29940 Sequence co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A29941 Oligonucleo
                                                                   A52326 Sequence 1
AR027062 Sequence
                             AR027065 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .1302
/organism="Canis familiaris"
/db_xref="taxon:9615"
1. .51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                HSU31120
AC004039
AC074127
AC074127
BTA132441
HUM11DC982
MUSIL13A
                                                                                                                                                                                                                                                                     HUM11DC992
HUM1L13B
HSU10307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RATNACHRR5
RNU42976
SC2H12.
A29940
AR027065
AR027065
186198
A52326
AR027062
186195
A29930
158481
158495
MUSSTCPE
134549
RATILL3A
AF276990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC0084392
AC005742
AC020886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A29941
I58485
A29939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF244915.1 GI:7528273
                                            93
94
94
94
10
                                                                                                                                                                                                                                                                       93
93
75
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 (bases 1 to 1302)
                                                             4410
4410
4410
336
336
                                                                                                                                                                                                                                                                     3714
4600
4740
5670
50282
78469
3520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142732
159500
237823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .447
                                                                                                                                                                                                                                                                                                                                                                                                                                       3395
4376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2461
38390
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris
```

1. INCELL 20485146 11032397

MEDLINE PUBMED

JOURNAL

AUTHORS JOURNAL

REFERENCE

source

FEATURES

5'UTR CDS

DEFINITION ACCESSION

AF244915

ORGANISM

KEYWORDS

VERSION

REFERENCE AUTHORS TITLE

25.1 123.6 15.8 15.8 115.8 111.4

ò g ŏ g ò q ô g οy a ò QQ

```
/translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPCPVPPSTALR
ELIEELVNITONQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                          /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                                                                                                                    /note="alternative; ATG at 15 is an alternative start codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      356
                  /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 230.8; DB 92;
Pred. No. 7.9e-49;
                                                                                                                                                                                                                                                                                                                                         HVRDTK IEVAQFVKDLLLHLKKLFREGRFN'
                                                             /evidence=experimental
/proteth_id="CAA48823.1"
/db_xref="G1:58030"
/db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                            /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="GI:673420"
/db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                   'product="NC30; alternative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           856. .860
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73. .877
note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134. .1138
note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.28;
                                                                                                                                                                                  /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                     /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                     .17. .452
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 77.7
Matches 306; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polyA_signal
BASE COUNT 293
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                       sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                               variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            357
                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                           5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minty,A.J., Chalon,P., Derocq,J.M., Dumont,X., Guillemot,J.C.,
Kaghad,M., Labit,C., Leplatois,P., Liauzun,P., Miloux,B., Minty,C.,
Casellas,P., Loison,G., Lupker,J., Shire,D., Ferrara,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                       agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                  105 GGCCTGTGCCTCTACAGCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACC 164
                                                                                                                                                                                                                             cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                          ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                                                                                                                                                                                              agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches, Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE 2 (bases 1 to 1282)
                                                                           Gaps
                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.

    (bases 1 to 1282)

                                                                                                                                                                                                                                              aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                       1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                           9
                                           Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/chromosome="5q 23-31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                           Indels
                                           DB 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRI
                                                                         82;
                                          Score 230.8; DB 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="NC30"
15. .116
/gene="NC30"
/product="NC30; alternative"
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355 tatýtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .1262
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H.sapiens interleukin-13 mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                           59.28;
77.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X69079.1 GI:297787
                                                          Best Local Similarity 77.7
Matches 306; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .ymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minty, A.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caput, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sig_peptide
                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                   45
                                                                                                                                                                 61
                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                       178
                                                                                                                                                                                                                                                                                                                     225
                                                                                                                                                                                                                                                                                                                                                    238
                                                                                                                                                                                                                                                                                                                                                                                285
                                                                                                                                                                                                                                                                                                                                                                                                              295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSNC30
```

ä

ò g DEFINITION

Locus

RESULT 134548

ACCESSION

VERSION

KEYWORDS

ORGANISM

REFERENCE AUTHORS BASE COUNT

ORIGIN

TITLE JOURNAL FEATURES

```
/translation="MALLLTTVIALFCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
Submitted (15-JAN-1998) Protein Engineering, General Institute of Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong, Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                                                                                  /PCR_conditions="94C-1min, 50C-1min, 72C-3min, 30 cycles;
DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184 GGCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAG 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTTTGGAGCATCAACCTGACAGCT 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304 AGCTTGCATGTCCGAGACACCAAAATCGAGGTGCCCAGTTTGTAAAGGACCTGCTCTTA 363
                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 ATGGCGCTTTTGTTGATGACCACGGTCATTGCTCTCACTTGCCTTGCCGCTTTGCCTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                   Sosa-gu, Bucheon 422-231, Korea
Nosted PCR:
1) first PCR:
1 forward primer (5'-ctcaatcctctctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctgc-3')
2) second PCR:
5 ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-qatgctttcgaagtttcagttgaa-3')
reverse primer (5'-qatgctttcgaagtttcagttgaa-3').
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58.8%; Score 229.2; DB 88; 77.4%; Pred. No. 2.2e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.2e-48;
hes 83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                364 CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="interleukin
complement(394. .417)
/note="second PCR"
121 c 108 g
                                                                                                                                                                                                                                                                                                                                                              /note="second PCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="IL13"
64. .399
                                                                                                                                                                                                                                                                                                         /gene="IL13"
                                                                                                                                                                                                                                                                                                                           1. .24
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                                                           primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Sim
es 305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355
   JOURNAL
                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 417)
Jang, J.S. and Kim, B.E. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF043334 417 bp mRNA PRI 21-FEB-1998
Homo sapiens interleukin 13 precursor (1L13) mRNA, complete cds.
AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagaatc---aggcatccctctgcaacggcatggtgtggagcgtcaacctgaccgcc 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 AGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTA 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                   06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 atggegetetggttgaetgtggteattgeteteacetgeetegggeettgeeteeeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105 GGCCCTGTGCCCTCCCTTAACAGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285 AAGACCCAGAGGATGCTGAGGGGATTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10; Length 1290;
                                                                                                                                                                                                                                                                                  1 (bases 1 to 1290)
Culpopper.<sup>2</sup>., McKenzle, A., Dang, W. and Zurawski, G.
Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                     PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59.2%; Score 230.8; DB 1
77.7%; Pred. No. 7.9e-49;
                   117 CATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                       311
                                                                                                                                                    5596072
   tatgtaaggggagtttatcgccatggaaatttca
                                                                                                                                                                                                                                                                                                                                                            cocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                /organism="unknown"
335 c 336 g
                                                                                                                                                Sequence 1 from patent US
134548
134548.1 GI:1825339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF043334.1 GI:2905619
                                                                                                                                 1290 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 306; Conservative
                                                                                                                                                                                                                                                 Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                               Unknown.
                                                                                                                                 134548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                    source
```

121

ò

Db

Q ò g 178

ò

q

238

à

g

ä

Gaps 9 63

9

Length 417;

294 303

ORGANISM

AUTHORS TITLE

REFERENCE

DEFINITION

AF043334

ACCESSION

KEYWORDS

SOURCE

VERSION

295

ò g 355

ò Q S

Mon

DEFINITION ACCESSION VERSION

RESULT A29948

SOURCE ORGANISM

KEYWORDS

REFERENCE AUTHORS source

FEATURES

CDS

JOURNAL

TITLE

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovinae; Bovinae; Bos.
1 (bases 1 to 343)
Trigona, W.L., Brown, W.C. and Estes, D.M.
Trigonal implications for signaling via the IL4R/IL13R complex on bovine cells
                                                                                                                                            1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Frotein having interleukin 13 activity, recombinant DNA coding:
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57 ATGGCGCTTTTGTTGACCACGGTCATTGCTCACTTGCCTTGGCGGCTTTGCCTTGCCTCCCCA 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JAN-2000
partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 cagaatc---aggcatccctctgcaacggcagcatgggtgtggagcgtcaacctgaccgcc | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 atggcgctctggttgactgtggtcattgctctcacctgcctcggtggccttgcctcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF072807 343 bp mRNA MAM
Bos taurus interleukin-13 precursor (IL-13) mRNA,
AF072807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /et. Immunol. Immunopathol. 72 (1-2), 73-79 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 229.2; DB Pred. No. 2e-48; 0; Mismatches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 343)
Trigona,W.T., Hirano,A. and Estes,D.M.
                                                                                                                                                                                                                                                                                                                                                                            ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                          311
                                                                                                                                                                                                                                                                                                                                                /organism="unknown"
341 c 336 g
                                                                                                                                                                                                                                                                                                                                                                          336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF072807.1 GI:4558813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 58.8%;
Best Local Similarity 77.4%;
Matches 305; Conservative (
                         GI:2477726
                                                                                                                          Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus
                                                                                                                                                                                                                                                                                                                                                                            Q
I58488
I58488.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20080132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10614495
                                                                                                                                                                                                                                                                                                                                                                          309
                                                                    Unknown
                                                                                                      Unknown
                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
  ACCESSION
                                                                                                                                                 REFERENCE
                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
AF072807
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7
                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTTCC 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295 agigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacc 354
                                                                                                                                                                                                                 synthetic construct.
synthetic construct
artificial sequence.

1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms
Patent: EP 0506574-A 21 30-SEP-1992;
                                                                                                23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggacccagaggatgctgaaagcactgtgctctcaaaaagcccgcgggcagg---gatttcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                Coding sequence for protein with cytokine like activity A29948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/transl_table=11
/product=="protein with cytokine like activity"
/protein_id="CAA01982.1"
/db_xref="G1:1249029"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 229.2; DB 9;
Pred. No. 2e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="synthetic construct"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355 tatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I58488 1297 bp DNA
Sequence 15 from patent US 5652123.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 58.8%;
Best Local Similarity 77.4%;
Matches 305; Conservative
                                                                                           1297 bp
                                                                                                                                                                     A29948.1 GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
```

Query Match Best Local S

117

g

ò g ò qq ò g οχ

178 237 238 297

BASE COUNT ORIGIN

LOCUS

RESULT 158488

357

οq

ò q ò g

417

ä

9

177

237 296 294 356

for

~

```
97 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                    259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 259;
                                                            Query Match
Best Local S
Matches 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
             COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                            232
                                                                                                                                                                                                                                                                                                                                                          349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
I58489
                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                COCUS
             BASE
                                                                                                                                  ф
                                                                                                                                                           ò
                                                                                                                                                                                    рþ
                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                        /translation="wallltravivliceggltspspvpsatalkelieelvnitonok
vplcngswywslnitssmycaaldslisisncsviortkrminalcphkpsakqvsse
yvrdtkievaqe"
                                                                                                                                                                                                                                                                                                                       5
                         Θ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
Direct Submission
Submitted (16-JUN-1998) Veterinary Pathobiology, University of
Missouri-Columbia, W213 Veterinary Medicine Building, Columbia,
65211, USA
                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                        237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         294
                                                                                                                                                                                                                                                                                                                                            6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms Patent: EP 0506574-A 23 30-SEP-1992; ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.1 AGCATGTACTGCAGCCCTGGACTCCCTGATCAGCATCTCCAACTGCAACTGCAACTCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            238 aggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggc---agggatttcc
                                                                                                                                                                                                                                                                                                                                                                                                agccctgtgactccctcccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178 ggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaa
                                                                             /db_xref="taxon:9913"
/cell_type="activated peripheral T lymphocytes"
1. .>343
                                                                                                                                                                                                                                                                                               Length 343;
                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 AGTGAGTACGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTG 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           295 agtgaacgcagccgagacaccaaaattgaagtgatccagttgg 337
                                                                                                                                                          /codon_start=1
/product="interleukin-13 precursor"
/protein_id="AAD22748.1"
/db_xref="GI:4558814"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                           Score 203.8; DB 7;
Pred. No. 6.9e-42;
0; Mismatches 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="synthetic construct"
                                                                                                                                                                                                                                               u
                                                                                                                                                                                                                                               4
                                                            1. .343
/organism="Bos taurus"
                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acid fragment B. A29950
                                                                                                                    /gene="IL-13"
1. .>343
                                                                                                                                             /gene="IL-13"
                                                                                                                                                                                                                                                                                             Query Match 52.3%;
Best Local Similarity 78.7%;
Matches 270; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 384)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A29950.1 GI:1249030
                                                                                                                                                                                                                                               101 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384
                                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A29950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
A29950
LOCUS
DEFINITION
ACCESSION
VERSION
                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                    61
           JOURNAL
                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
Unclassified.

(bases 1 to 384)

(caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding for this protein, transformed cells and microorganisms
Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       288
                                                                                                                                                                                                                                                                                                                                                                                                                                  196 ATCGAGAAGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAG 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tececegagecetgtgaetecetececeaaceeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  115 atcacccagaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                    55 teceegageeetgtgaeteeeteeeaaeeeteaaggageteattgaggagetggteaae 114
                                                                                                                                                                                                                                            115 atcacccagaatc---aggcatcctctgcaacggcagcatggtgtggagcgtcaacctg 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 TCCCCAGGCCCTGTGCCCTCTACGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-0CT-1997
                                                                                                                                                                                          16 TCCCCAGGCCCTGTGCCTCCCTTACGGCCCTCAGGGAGCTCATTGAGGAGCTCAGCTCAAC
                                                                                                                                                                                                                                                                                                                        172 accgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgcc
                                                                                                                                                                                                                                                                                                                                                                                               atccaaaggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggagg---g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 384;
                                                                                              Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75; Indels
                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  316 CTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 355
                                                                                           Score 188; DB 9; I
Pred. No. 7.4e-38;
0; Mismatches 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 188; DB 10;
Pred. No. 7.4e-38;
0; Mismatches 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctcacctatgtaaggggagtttatcgccatggaaatttca
                     u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ų
                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             I58489 384 bp DNA
Sequence 17 from patent US 5652123.
I58489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
/db_xref="taxon:32630"
104 c 99 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="unknown"
104 c 99 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.2%;
                                                                                           48.28;
76.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:2477727
                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .384
                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
```

ñ

\_

5

Gaps

; 9

LOCUS

ACCESSION VERSION

349

ò

g

à

a

ORGANISM

KEYWORDS SOURCE

REFERENCE AUTHORS JOURNAL

TITLE

FEATURES

61

for

```
1 (bases 1 to 425)
Legoux,R., Maldonado,P. and Salome,M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine patent: US 5856142-A 4 05-JAN-1999;
Location/Qualifiers
                                          gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 355
                                                                                                                                                                                                                                                                                                                62 gccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gectececgagecetgtgaetecetececaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                2 GCCCTGTGCCTCCTATACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGGGAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTTAC
                                                                                                                                                                                                                                                         Length 336;
                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                     71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 9;
                                                                                                                                                                                                                                                      Score 187.4; DB 10
Pred. No. 1.1e-37;
0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 186.2; DB 9
Pred. No. 2.1e-37;
0; Mismatches 78
                                                                                                                                                                                                ų,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgtaaggggagtttatcgccatggaaatttca 388
|| || || | | | || || || | || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5856142
                                                                                                                                                                               /organism="unknown"
95 c 90 g
                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AR027065.1 GI:593700F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
116 c 110 g
                                                                                                                                                                                              b
                                                                                                                                                                                                                                                        48.18;
76.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47.78;
                                                                                                                                                                                                                                                     Query Match 48.1
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 259; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                 Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown
                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
                                 ORGANISM
                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52
                                                                           AUTHORS
                                                              REFERENCE
                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR027065
   KEYWORDS
                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                        TITLE
                  SOURCE
                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5,
                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256 TITTCCAGCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTGTAAAGGACCTG 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             geatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 gecetgigactecetececaaceeteaaggageteattgaggagetggieaacateaeee 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                        synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 336)
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding this protein, transformed cells and microorganisms
Patent: EP 0506574-A 3 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-0CT-1997
182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289 atttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 336;
                                                                                                                                                                                              336 bp DNA PAT 23. Sequence coding for the mature cytokine like protein. A29931.1 GI:1249010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAT
                                                                                                                                   316 CICTTACATTTAAAGAAACTTTTTGGCGAGGGACGGTTCA 355
                                                                                                                      ctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 187.4; DB 9;
Pred. No. 1.1e-37;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="synthetic construct"
/db_xref="taxon:32630"
95 c 90 g 71 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158494 336 bp DNA Sequence 24 from patent US !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match

Best Local Similarity 76.9%;
Matches 256; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:2477732
                                                                                                                                                                                                                                                                                                                                                                                                                                SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158494.1
```

BASE COUNT ORIGIN

179 122 239

ò

q

à

g

q

296 242

ò

g

QQ

ð

ñ

; 9

DEFINITION

ACCESSION VERSION

RESULT 12

qq

à

```
terminator
                                                                                                                                                                                                                                                                                                                                                                                                                    terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                         terminator
                                                                                                                                                                                                                                                                                                                                                   promoter
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                    misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_RNA
                                                      DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169
                                                                                                                                   REFERENCE
                                                                                                                                              AUTHORS
                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                        TITLE
                        RESULT
A52326
                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;;
                                                                                                                                                                                                                                                                                                                                                                                                        prokaryotic
                                                                                                                       287
ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                 234
                                                                                                                                                                 288 --gatttccagtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaac 345
                                                                                                                                                                                       295 CAGITITICCAGCITGCATGICCGAGACACCAAAATCGAGGIGGCCCAGITIGIAAAGGAC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              geotococogagocottgtgactcoctccocaaccetcaaggagetcattgaggagetggtc 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112 aacatcacccagaatc---aggcatccttgcaacggcagcatggtgtggagcgtcaac 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                            10-JUN-1998
                                                                                                                      112 aacatcacccagaatc---aggcatccctctgcaacggcatggtggtggagcgtcaac
                                                                                        --gatttccagtgaacgcagcagcacccaaattgaagtgatccagttggtgaaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gocatecaaaggaeceagaggatgetgaaageaetgtgeteteaaaageeegeggeagg-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCATCGAGAAGACCCAGAGGATGCTGAGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
9
                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 425;
                                                                                                                                                                                                                                                                                                                                                                            Legoux, R., Maldonado, P. and Salome, M.
Legoux, R., Maldonado, P. and Salome, M.
Method for the extraction of periplasmic proteins
microorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                             346 ctgctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                         355 CTGCTCTTACATTTAAAGAAACTTTTTCGCGAGGGACGGTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgctcacctatgtaaggggagtttatcgccatggaaatttca 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 47.7%; Score 186.2; DB :
Best Local Similarity 75.5%; Pred. No. 2.1e-37
Matches 259; Conservative 0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                   lety8 425 bp DNA
Sequence 4 from patent US 5700665.
186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unknown"
116 c 110 q
                                                                                                                                                                                                                                                                                                                          186198.1 GI:3205916
                                                                                                                                                                                                                                                                                                                                                                      Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                      115
                                                                            169
                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
           55
                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                               186198
                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                           qq
                                                                                                                                           qq
                                                   ΩD
                                                                          ò
                                                                                                                     ò
                                                                                                                                                                  ò
                                                                                                                                                                                    q
                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

```
1254. 2505

/note="GENE CODANT POUR LE REPRESSEUR DE L'OPERON LACTOSE"

2506. 4410

/note="SEQUENCE DE PBR 327"

a 1142 c 1096 g 1094 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. 7282
283. 337
7note-"SEQUENCE DE LA REGION 5' NON TRADUITE DU MESSAGER"
338. 762
7note-"SEQUENCE CODANT POUR LE PRECURSEUR DE L'IL-13"
                                                                                                                                                                   Legoux, R., Maldonado, P. and Salome, M. Process of extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine Patent: EP 0725140-A 1 07-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52 gecteceegageeetgtgaeteeeteeeeaaceeteaaggageteattgaggagetggte 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctgaccgccggcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagc 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
            12-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 9; Length 4410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="TERMINATEUR DU GENE 10 DU PHAGE T7'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1013. 1253
/note="TERMINATEUR DU PHAGE FD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47.7%; Score 186.2; DB 975.5%; Pred. No. 1.8e-37; Live 0; Mismatches 78
                                                                                                                                                                                                                                                     other publication SK 10696 960904
Other publication CZ 9600290 960814
Other publication DF 8242879 960924
Other publication FI 960427 960801
Other publication PL 312543 960805
Other publication RR 2729972 960801
Other publication CA 2168382 960801
Other publication AU 4224496 960808
A52326 4410 bp DNA
Sequence 1 from Patent BP0725140.
A52326
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="unidentified"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                               A52326.1 GI:2851987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              763. .812
813. .1012
                                                                                                                                                                                                                      Patent: EP 0725140-3
SANOFI SA (FR)
Other publication SI
Other publication C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                       (bases 1 to
                                                                                                                                   unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 259; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1078
```

Search completed: May 13, 2001, 14:25:18 Job time: 19398 sec us-09-451-527-104.rge

Run on:

```
44:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
                                                                    May 13, 2001, 14:25:18; Search time 9342.78 Seconds (without alignments) 520.915 Million cell updates/sec
                                                                                                               US-09-451-527-104
330
1 agccctgtgaactccctcccc.....atcgccatggaaatttcaga 330
                                                                                                                                                                                                                2566470
        GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                         1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                         IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_htg_hum6:*
em_htg_hum6:*
em_htg_hum8:*
em_htg_inv1:*
em_htg_inv2:*
em_htg_inv2:*
em_htg_other:*
em_htg_rod:*
em_htg_rod:*
                                                                                                                                                                                                                                                                                                                     9b_ba1:*
9b_ba2:*
9b_ba3:*
9b_ln1:*
9b_ln3:*
9b_ln3:*
9b_pa1:*
9b_pat1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_htgo_inv:*
em_htgo_rod:*
em_htg_hum1:*
em_htg_hum2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_htg_hum3:*
em_htg_hum4:*
em_htg_hum5:*
                                                                                                                                                                                                                                  Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_hum5:*
em_hum6:*
em_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_hum3:
em_hum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_hum2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_in:*
                                                                                                                                                                                                                                                                                                              GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                         Searched:
                                                                                                                                     Sequence:
```

|     |       |      |            |     | •   |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 3       |
|-----|-------|------|------------|-----|-----|------|--------|-----------|--------|-----|---------|------|-------------|------|----------|------|--------|------------|------------|------------|------|----------|------|-----------|------|----------|--------|-------------|------|------|------|----------|-----|-----|------|-----------|------|------------|---------|
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 5       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 2       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | :       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | i.<br>T |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | +       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 7       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             | ,    |      |      |          |     |     |      |           |      |            | \$      |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 4       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 9       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          | ٠.   |           |      |          |        |             |      | _    |      |          |     |     |      |           |      |            | ų       |
| *   | بديد  | *    |            |     | * * | . *. |        | . 1       | * *    | *   | * 1     | * 1  | *           | *.   | *.       | *.   | *      | 0          |            | ) n        |      | 15:1     | . 91 |           |      | 50:      | 21:1   |             |      | 25:4 | * 1  | k #      | *   | *   | *    | * 1       | k #  | * *        | ,       |
| ov: | 7.7.5 | sts. | sy:<br>un: | 7   | Sts | sts  | .: Ys. | :<br>:::: | 117    | ntg | ntg     | 179  | ביר<br>ביקו | nt d | ntğ      | ntg  | ntg.   | ntg<br>itg | 1.5        | nt a       | nt g | ntğ      | ntg. | ntg<br>ta | ttg. | nt g     | ntg.   | 55          | at g | ıtğ  | orl  | 27.5     | )r4 | or5 | or6: | or 7      | or 6 | rol<br>ro2 | 4       |
|     |       | ) "I | e e        | e e | g t | 1 d  | ag.    | 96        | d d    |     | را<br>ا | 96.4 | 5 G         | l di | la<br>La | gb_l | ۾<br>آ | 8 4<br>    | 3 4<br>3 4 | 9 6<br>1 6 | l di | gb<br>[] | g.   | 9<br>1    | 2 G  | la<br>La | ر<br>ا | מיני<br>פול | gp.  | q.   | g i  | 8 4<br>1 | 2 0 | qE  | qe.  | gb<br>- 1 | d d  | _de<br>de  | 5       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 4       |
| 44  | 47    | 49   | 51         | 52  | 5 4 | 55   | 26     | 57        | n<br>n | 9   | 61      | 2 0  | 64          | 65   | 99       | 29   | 89     | 9 6        | 2 5        | 72         | 73   | 74       | 75   | 76        | 78   | 79       | 80     | 2 0         | 83   | 84   | 30 0 | 8 2      | 88  | 89  | 90   | 91        | 9 6  | 94<br>95   |         |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 2       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            | 7       |
|     |       |      |            |     |     |      |        |           |        |     |         |      |             |      |          |      |        |            |            |            |      |          |      |           |      |          |        |             |      |      |      |          |     |     |      |           |      |            |         |

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

| S        |
|----------|
| ы        |
| Н        |
| $\simeq$ |
| 5        |
| Σ        |
| Σ        |
| ם        |
| S        |

|   | Description                 | AF244915 Canis fam | A29931 Sequence co | I58494 Sequence 24 | L06801 Homo sapten | X69079 H.sapiens i | I34548 Sequence 1 | A29930 Sequence co | I58481 Sequence 2 | AF043334 Homo sapi | A29948 Coding segu | 158488 Sequence 15 |
|---|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
|   | ID                          | AF244915           | A29931             | I58494             | HUMIL13A           | HSNC30             | I34548            | A29930             |                   |                    |                    | 158488             |
|   | DB                          | 7                  | 6                  | 10                 | 63                 | 92                 | 10                | 6                  | 10                | 88                 | 6                  | 10                 |
|   | Query<br>Match Length DB ID | 1302               | 336                | 336                | 1270               | 1282               | 1290              | 336                | 336               | 417                | 1297               | 1297               |
| ÷ | Query<br>Match              | 96.1               | 56.8               | 56.8               | 56.8               | 56.8               | 56.8              | 56.3               | 56.3              | 56.3               | 56.3               | 56.3               |
|   | Score                       | 317                | 187.4              | 187.4              | 187.4              | 187.4              | 187.4             | 185.8              | 185.8             | 185.8              | 185.8              | 185.8              |
|   | Result<br>No.               |                    | 7                  | m                  | 4                  | 2                  | 9                 | 7                  | 80                | σ                  | 10                 | 11                 |

1;

```
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                       δ
                                                                                                                                         96.18;
99.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A29931.1 GI:1249019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthetic construct.
                                                                                                                                                                            330; Conservative
                                                                                                                                                         Best Local Similarity
Matches 330; Conserv
                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ಹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                         Query Match
                                                   3'UTR
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
A29931
                                                                                      ORIGIN
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gg
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                       L25913 Rattus Norv
L42080 Homo sapien
L42080 Homo sapien
L13029 Human inter
U10307 Human inter
U10307 Human inter
AC04039 Homo sapi
AC074127 Homo sapien
AJ132441 Bos tauru
AC074127 Homo sapien
AJ13248 Mouse inter
AC084392 Homo sapi
L13028 Mouse inter
AC084392 Homo sapi
AC005742 Mus muscu
AC05542 Mus muscu
AC05686 Mus muscu
AL359215 Streptomy
M92377 Mus musculu
AL078618 Streptomy
AP000063 Aeropyrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MALWLTVVIALTCLGGLASPSPVTPSPTLKELLEELVNITQNQA
A29950 Nucleic aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77894 Streptomyce
AF195788 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
                                                                                                                                                         I58495 Sequence 26
                                                                                                                                                                             Mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AB025632 Arabidops
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases 1 to 1302).
Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length cDNA and expression of biologically active recombinant protein J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                                                     I86195 Sequence 1
AF072807 Bos tauru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AJ223310 Streptomy
U77894 Streptomyce
                                               AR027065 Sequence
I86198 Sequence 4
                                                                                      Sequence 1
                                                                                                      AR027062 Sequence
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF244915 1302 bp mRNA MAM 1
Canis familiaris interleukin-13 mRNA, complete cds.
AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .1302
/organism="Canis familiaris"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="interleukin-13"
/protein_id="AAF63204.1"
/db_xref="G1:7528274"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                                                                                                                                                         RATILI3A
AF27690
HUMI1DC992
HUMILI3B
HSU10307
HSU31120
AC004039
AC074127
HUMI1DC982
                                           AR027065
0 186198
AS2326
AR027062
186195
AF072807
158495
MUSSTCPE
134549
                                                                                                                                                                                                                                                                                                                                                                                                                         AC084392
AC005742
AC020886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MUSGABAT
SCD16A
                                                                                                                                                                                                                                                                                                                                                                                                         MUSIL13A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SAAJ3310
SAU77894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF195788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SC2H12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF244915.1 GI:7528273
                                               7
7 7 5
9 4
9 4
9 6
9 6
9 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 1302)
                                                                                                                                                                        1207
                                                                                                                                                                                                                                                              4600
4740
5670
50282
78469
                                                                                                                                                                                                                                                                                                                                                                                                                                        159500
237823
38390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13684
39739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris
                                                                                                                                     44444
44444
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
44554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lang, S.
                184.2
184.2
182.6
182.6
182.6
182.6
182.6
163.6
                                                                                                                                                                                                                                                                                                                                                                                       36.8
36.6
36.4
36.4
                                                                                                                                                      151.4
1151.4
1151.4
1160.8
106.4
71.4
71.4
71.4
71.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF244915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                       000
```

```
artificial sequence.

artificial sequence.

(a) (bases I to 336)

Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.

Protein having cytokin type activity, recombinant DNA coding for
this protein, transformed cells and microorganisms

Patent: EP 0506574-A 3 30-SEP-1992;

ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                       291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112 AGCCCTGTGACTCCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC 171
                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                         181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaag---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                              121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                    1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            адэээт 336 bp DNA PAT 23-
Sequence coding for the mature cytokine like protein.
A29931
                                                                                                Score 317; DB 7; Leuy... --
Pred. No. 1.1e-72;
.....trhes 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 187.4; DB 9; Length
Pred. No. 9.3e-39;
0; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         construct"
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
448. :1302
1 318 c 340 g 307 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ب
                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298 gtaaggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             412 GTAAGGGGAGTTTATCGCCATGGAAATTTCAGA 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71

    .336
    /organism="synthetic cc/db_xref="taxon:32630"
    a 95 c 90 g
```

de

Euteleostomi;

179

ò qq à g à qq ö g

236

```
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOR APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi Mammalia; Eutheria, Primates; Catarrhini; Hominidae, Homo.

McMenale, B. 1 to 1270)

McKenzie, A.N. J., Culpepper, J.A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., Viles, J.E., Banchereau, J. and Zurawski, G.R.

Interjukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function

Proc., Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agaatc -- aggcatcctttgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhin; Hominidae; Homo.
1 (bases 1 to 1282)
                                        cytokine; growth factor; interleukin 13; regulatory protein
Homo sapiens cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gtgaacgcagccacaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 187.4; DB 93;
Pred. No. 8.5e-39;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 HVRDTKIEVAQFVKDLLLHLKKLFREGRFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    311 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                 /product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="G1:186276"
                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1282 bp mRNA

H.sapiens interleukin-13 mRNA.

X69079

X69079.1 GI:297707
                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   336 g
                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative C
                      GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335 c
                                                                                                                                                                                                                                                                             .1270
                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                    L06801.1
                                                                                                                                                                                                                                            93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA_site
                                                                                                                                                                                                                                                                                source
                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               386
     ACCESSION
                    VERSION
KEYWORDS
                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSNC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                            l (bases 1 to 336)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 24 29-JUL-1997;
179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236 gigaacgcagccgagacaccaaaaitgaagigaiccagitggigaaaaaccigcicacci 295
                                                                                                                                                        62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                            07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-JUL-1993
                                                                                     gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                     ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56.8%; Score 187.4; DB 10; Length 336; 76.9%; Pred. No. 9.3e-39; 1ve 0; Mismatches 71; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ىد
                                                                                                                                                                                                   158494 336 bp DNA
Sequence 24 from patent US 5652123.
158494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgtaaggggagtttatcgccatggaaatttca 328
|| || || | | | || || || || || || || ATTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="unknown"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                                           I58494.1 GI:2477732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 a
                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION P
```

source

JOURNAL

TITLE

FEATURES

BASE COUNT ORIGIN

62

qq

δ 셤 δ qq ò

DEFINITION ACCESSION

RESULT

I58494

LOCUS

ORGANISM

KEYWORDS

SOURCE

VERSION

REFERENCE AUTHORS

3

Gaps

9;

345

17-FEB-1997

302

Dp

HUMIL13A

RESULT

296

ò

Dp

ò

g

235

285

```
Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  308 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
FEATURES
                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
134548
                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pp
                                                                                                        d
                                                                                                                                                                  P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                          ŏ
                                                                                                                                      ŏ
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence-experimental
/protein_id="CAA48823.1"
/db_xref="GI:S60330"
/db_xref="SWISS-PROT:P3525"
/translation="MHPLLAGEAGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEBLYNITQNQKAPLCNGSWWWSINLTAGHYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAOFVKDLLLHLKKLFREGRFN"
Minty, A.J.

Direct Submission

Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches,
Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE

(bases 1 to 1282)

Minty, A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C.,
Kaghad, M., Labit, C., Leplatois, P., Liauzun, P., Miloux, B., Minty, C.,
Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSL
                                                                                                                                      Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                   'note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1282
                                                                                                                                                                                                                                                     /chromosome="5g 23-31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 187.4; DB 92;
Pred. No. 8.5e-39;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HVRDTKIEVAQFVKDLLLHLKKLFREGRFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="NG30; alternative"
117. 452
/gene="NG30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                     'product="NC30; alternative'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="GI:673420"
                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                    and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      evidence-experimental
                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .s6. .860
'note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73. .877
note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1134. .1138
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1153. .1157
/note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      337
                                                                                                                                                                                                                                                                                                                                                                                                                                 'codon_start=1
                                                                                                                                                                                                                                                                                                       /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative (
                                                                                                                                                                                                                                                                                                                         15. .116
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                       15. .455
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="NC30."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ′gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1264
                                                                                                                         Caput, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_signal
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variation
                                                                                                                                                                                                                  source
               TITLE
                                                                                                                                                                                  MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                              gene
 AUTHORS
                                                                             AUTHORS
                                                             REFERENCE
                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                      TITLE
```

```
235
                                                                                                                                                                                                                                                         235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                             297
                                                                                                                                                                                                                                                                                                357
                                                                                                                                                                                                                                                                                                                                            236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacct 295
                                                                                                                           237
                                                                                                                                                                                                                                                                                                                                                                                    358 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
  61
238 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 agaatc---aggcatccctctgcaacggcagcatggtgtgggagcgtcaacctgaccgccg
                                                                                                         298 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               286 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                         179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zurawski, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 187.4; DB 10; Length
Pred. No. 8.5e-39;
0; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unclassified.

1 (bases 1 to 1290)
Culpepper, J., McKenzie, A., Dang, W. and Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                              296 atgtaaggggagtttatcgccatggaaatttca 328
|| || || | | | || || || || || || || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        418 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296 atgtaaggggagtttatcgccatggaaatttca 328
|| || || | | | || || || | || || || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5596072.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="unknown"
335 c 336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134548 1290 bp DN
Sequence 1 from patent US
134548
134548.1 GI:1825339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .1290
```

ä

ä

Gaps

9

Indels

```
Location/Qualifiers
                                                                                                 255; Conserv
                                       Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  primer_bind
                                                                                     Query Match
                                                                                                  Local
                                      BASE COUNT
                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF043334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                   ORIGIN
                                                                                                                                                          qq
                                                                                                                                                                                   δy
                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                             δχ
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                3
                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l (bases 1 to 336)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatols, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 2 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 AGAACCAGAAGCCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTAC 301
                                                             23-JUN-1995
                                                                                                                                                1 (bases 1 co 336)

Caput, D., Ferrara, C., Guillemot, J.C., Kaghad, M., Labit-le

Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.

Protein having cytckin type activity, recombinant DNA coding :

this protein, transformed cells and microorganisms

Patent: EP 0506574-A 2 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                        07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                          Length 336;
                                                                         mature cytokine like protein
                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAT
                                                                                                                                                                                                                                                                                                                                         Score 185.8; DB 9;
Pred. No. 2.4e-38;
); Mismatches 72;
                                                                                                                                                                                                                                                                     construct"
                                                                                                                                                                                                                                                                                          ىد
 ATTTAAAGAAACTTTTTGGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2 from patent US 5652123. IS8481.1 GI:247777
                                                                                                                                                                                                                                                      1. .336
/organism="synthetic cc
/db_xref="taxon:32630"
a 95 c 89 g
                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                     Sequence coding for the A29930
                                                                                                                                                                                                                                                                                                                                         56.38;
llarity 76.68;
Conservative (
                                                             336 bp
                                                                                               A29930.1 GI:1249018
                                                                                                                                  synthetic construct
artificial sequence
                                                                                                                       synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unknown
                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                255;
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S:
Matches 255
                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                       DEFINITION
ACCESSION
                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
 406
                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302
                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                          REFERENCE
                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                            KEYWORDS
                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                              VERSION
                                     RESULT
A29930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
I58481
                                                                                                                                                                                                                                                                                                      ORIGIN
셤
                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οχ
```

```
<u>``</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cycles;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF043334 417 bp mRNA PRI 21-FEB-1998
HOMO sapiens interleukin 13 precursor (IL13) mRNA, complete cds.
AF043334
AF043334.1 GI:2905619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Jang, J.S. and Kim, B.E.
Direct Submission
Submisted (15-JAN-1998) Protein Engineering, General Institute Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong, Nested PCR:
                                                                                                                                                                                                                                                                                                                     235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 agaatc---aggeatcectetgeaaeggeageatggtgtggagegteaaeetgaeegeeg 118
                                                                                                                                                                                                                                                                                    62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
                                                                                                                                                                                                                                                                                                                                                                                                                     /note="second PCR"
/PCR_conditions="94C-1min, 50C-1min, 72C-3min, 30
DeltaCycler II from Ericomp"
                                                                                                                                                                                                                                                                                                                                                                                                 179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                    9
                                                                                             Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; E
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1) first PCR:
forward primer (5'-ctcaatcctctctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctctgc-3')
2) second PCR:
forward primer (5'-ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-gatgctttcgaagtttcagttgaa-3')
Location/Qualifiers
                                                                                               DB 10;
                                                                                           Score 185.8; DB 10;
Pred. No. 2.4e-38;
0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                     71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
1 (bases 1 to 417)
/organism="unknown"
95 c 89 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="IL13"
                                                                                             56.3%;
llarity 76.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="IL13"
```

```
BASE COUNT
                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                           236
                                                                                                                                                                                                                                                                                                                                                                  358
                                                                                                                                                                                                                                                                                                                                                                                        296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178
                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                          158488
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                           Db
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                      Pb
                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                     δy
                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                 OD
                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                   /product="interleukin 13 precursor"
/protein_id="AAC03535.1"
/db_xref="interleukin 13 precursor"
/db_xref="interleor"
/translation="MALLITYIALTCLGGFASPGPVPPSTALRELIEELVNITQNOK
APLCNSWWWSINLITAGMYCAALESLINVSGCSAIERTQRMLGGFCPHKVSAGQFSSL
HVRDIKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                    agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                               gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                        244
                                                                                                                                                                                                                                                                                                                                                                                                               235
                                                                                                                                                                                                                                                                                                                                                                                                                                    304
                                                                                                                                                                                                                                                                                                                                                                                                                                                          124
                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            synthetic construct.
synthetic construct
artificial sequence.

(bases I to 1297)

Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 21 30-SEP-1992;
                                                                                                                                                                                                                                                                                   ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca
                                                                                                                                                                                                                                                                       gccctgtgactccctcccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                   245 AGACCCAGAGGATGCTGGGCGGATTCTGCCCGCACAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein with cytokine like activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/product="protein with cytokine like activity"
                                                                                                                                                                                                                        Length 417;
                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                        DB 88;
                                                                                                                                                                                                                                               72;
                                                                                                                                                                                                                        56.3%; Score 185.8; DB 8 76.6%; Pred. No. 2.4e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           construct"
                                                                                                                                                                           u
                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                       /product="interleukin 13"
complement(394. .417)
/note="second PCR"
121 c ~108 g 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:32630

    1297
    /organism="synthetic

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                   /gene="IL13"
64. 399
                                                                                                                           /gene="IL13"
/gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coding sequence for
A29948
                                                                                                                                                                                                                                               Conservative
                                                                                          .63
                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SANOFI
                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A29948.1
                                                                                                                                                                           91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A29948
                                                                                           sig_peptide
                                                                                                                  mat_peptide
                                                                                                                                                    primer_bind
                                                                                                                                                                                                                                               255;
                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                     Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              365
                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                      ~
                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                        125
                                                                                                                                                                                                                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
A29948
                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COCUS
                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                G
                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

```
/translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIBELVNITONOKAPLCNGSMVWSINLTADMYCAALBSLINVSGCSAIEKTORMLSG
FCPHKVSAGOFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                                                                                                                                                                     119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118 GCCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGGAGCTGGTCAACATCACC 177
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-0CT-1997
                                                                                                                                                                                                                                                                     118 GCCCTGTGCCTCCTCTACAGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                298 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                 2 gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                              agaatc---aggcatccttctgcaacggcatggtgtgtggagcgtcaacctgaccgccg
                                                                                                                                                                                                                                                                                                                                                                                                                          238 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGCGTGCCATCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 gecetgigaeteceteceaaceeteaaggageteatigaggagetggicaacateaeee
                                                                                                                                                                                                            . 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A. Protein having interleukin 13 activity, recombinant DNA this protein, transformed cells and microorganisms Patent: US 5652123-A 15 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Labit-Le
                                                                                                                                                                       Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 10;
                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 185.8; DB 10;
Pred. No. 2.2e-38;
0; Mismatches 72;
                                                                                                                                                                     Score 185.8; DB 9
Pred. No. 2.2e-38;
0; Mismatches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    418 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5652123
/protein_id="CAA01982.1"
/db_xref="G1:1249029"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 1. .1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unknown"
                                                                                              б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               336
                                                                                              336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 15 from patent (158488
                                                                                                                                                                       56.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 56.3%;
Best Local Similarity 76.6%;
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               341 c
                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unclassified
                                                                                                                                                                                          Best Local Similarity
                                                                                              ದ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158488.1
                                                                                            309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
```

07-0CT-1997

PAT

~

us-09-451-527-104.rge

236

179

ò

g ŏ 원 ŏ g

g

ò

```
1 (bases 1 to 384)
Caput.D., Ferrara.P., Guillemot.J., Kaghad,M., Labit-Le
Bouteiller.C., Leplatois.P., Magazin,M. and Minty,A.
Protein having interlewin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified.

1 (bases 1 to 425)
Legoux,R., Maldonado,P. and Salome,M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine Patent: US 5856142-A 4 05-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62 agaatc---aggeatecetetgeaaeggeageatgatgtggagegteaaeetgaeegeeg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                                                                                                                23 GCCCTGTGCCCCCCCTCTACGGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  203 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA
                                                                                                                                                                                                                                                                                                                                   DB 10; Length 384;
                                                                                                                                                                                                                                                                                                                                 55.8%; Score 184.2; DB 176.3%; Pred. No. 6.3e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           323 ATTTAAAGAAACTTTTCGCGAGGGACGGTTCA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 182.6;
                   5652123
                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AR027065 425 bp DNA
Sequence 4 from patent US 5856142.
AR027065
                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                                                    /organism="unknown"
                                                                                                                                                                                                                                                                      б
    DNA
                                                                                                                                                                                                                                                                      66
   384 bp
17 from patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AR027065.1 GI:5937905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55.3%;
                                                 GI:2477727
                                                                                                                                                                                                                                                                    104 c
                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                             Unclassified.
                                                                                                                                                                                                                                                                                                                                                al Similarity
254; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ಥ
                                                                                                                                                                                                                                                                       a
                    Sequence
                                                158489.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown.
                                                                                Unknown
                                                                                                Unknown
   158489
                                   158489
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
   LOCUS
DEFINITION
                                                                                                                                                                                                                                         source
                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 236
                                                                                                                             REFERENCE
                                                                                                                                           AUTHORS
                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR027065
                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                              62 agaatc -- aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236 gigaacgcagccgagacaccaaaaitgaagigaiccagiiggigaaaaaccigcicacci 295
                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 gecetytyaetteetteeteaacetteaaggageteattyaaggagetggteaacateaeee 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                        synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 384).
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 23 30-SEP-1992;
ELF SANOFI
263 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTAC
                                                                                                                           gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                   PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55.8%; Score 184.2; DB 9;
llarity 76.3%; Pred. No. 6.3e-38;
Conservative 0; Mismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .384
/organism="synthetic construct"
/db_xref="taxon:22630"
-104 c 99 g 84 t .
                                                                                                                                                                                    296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                       atgtaaggggagtttatcgccatggaaatttca 328
|| || | | | | | | | | | | | | | | | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                      Nucleic acid fragment B. A29950
                                                                                                                                                                                                                                                                                                 384 bp
                                                                                                                                                                                                                                                                                                                                            A29950.1 GI:1249030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity
Matches 254; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ಡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                 A29950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
```

REFERENCE AUTHORS

KEYWORDS

SOURCE

RESULT A29950

JOURNAL

TITLE

FEATURES

235 262

PAT

83

g

ò a ò

ò

Ob

296

ò

q

ò

g

RESULT I58489

Length 425;

9;

ä

Gaps 61 82

..

```
.;
?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 425)
Legoux R., Maldonado,P. and Salome,M.
Method for the extraction of periplasmic proteins from prokaryotic malcroorganisms in the presence of arginine
Patent: US 5700665-A 4 23-DEC-1997;
Location/Qualifiers
                                          119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                       179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca 235
                                                                                                                                                                                                                               245 AGACCCAGAGGAGGTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 304
                                                                                                                                                                                                                                                                      236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             305 GCTTGCATGCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 364
                                                                                                                                                                                                                                                                                       62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             10-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 gocottgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
 76.0%; Pred. No. 1.6e-37;
Live 0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 182.6; DB :
Pred. No. 1.6e-37.
0; Mismatches 74
                                                                                                                                                                                                                                                                                                                             296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                            186198 425 bp DNA
Sequence 4 from patent US 5700665
186198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tch 55.3%;
al Similarity 76.0%;
253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186198.1 GI:3205916
                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified.
Best Local Similarity
Matches 253; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                RESULT
186198
                                                                 Q
                                                                                                 ò
                                                                                                                          qq
                                                                                                                                                                             g
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                       ò
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

Search completed: May 13, 2001, 14:25:22 Job time: 19402 sec

```
Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1i; Page 239-240; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-072623/06.
P-PSDB; Y58224.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z55565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    interleukin
interleukin
interleukin
                                                                                   May 13, 2001, 14:30:24 ; Search time 472.02 Seconds (without alignments) 408.135 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canine mature inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mature inte
interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mature inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                          330
1 agccctgtgactccctcccc.....atcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine
Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgnl_8/gcgdata/geneseq/geneseqn/NA1997.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn1_8/gcgdata/geneseq/geneseqn/NA2000.DAT:*/cgn1_8/gcgdata/geneseq/geneseqn/NA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gcgdata/geneseq/geneseqn/NA1996.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgnl_8/gcgdata/geneseq/geneseqn/NN1986.DAT:
/cgnl_8/gcgdata/geneseq/geneseqn/NN1987.DAT:
/cgnl_8/gcgdata/geneseq/geneseqn/NN1988.DAT:
/cgnl_8/gcgdata/geneseq/geneseqn/NN1989.DAT
/cgnl_8/gcgdata/geneseq/geneseqn/NN1999.DAT
                                                                                                                                                                                                                                                                                                                                                                                                           N_Geneseq_0401:*
.: /cgnl_8/gcgdata/geneseq/geneseqn/NA1980.DAT:
.: /cgnl_8/gcgdata/geneseq/geneseqn/NA1981.DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn1_8/gcgdata/geneseq/geneseqn/nA1983.DAT:
/cgn1_8/gcgdata/geneseq/geneseqn/nA1984.DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn1_8/gcgdata/geneseq/geneseqn/NA1985.DAT:
                                                                                                                                                                                                                                                                              1356552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gcgdata/geneseq/geneseqn/NA1992/gcgdata/geneseq/geneseqn/NA1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gcgdata/geneseq/geneseqn/NA1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn1_8/gcgdata/geneseq/geneseqn/NA1982.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gcgdata/geneseq/geneseqn/NA1994
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                               678276 segs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                  Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255565
255566
255563
255563
255564
255561
2555562
255556
255556
255558
255558
255558
                                                                                                                                                                                                                    Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QT.
                                                                                                                                            US-09-451-527-104
                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length DB
                                                                                                                                                                                                       IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn1_8/
/cgn1_8/
/cgn1_8/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18:
20:
21:
22:
                                                                                                                                                                                                                                                                                                                                                   Post-processing:
                                                                                                                                                                                                                                                                                                         sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                 Searched:
                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ပ
```

ALIGNMENTS

|   | Canine interleukin | Canine interleukin | a)            | Gly41-Cytokine cod | Human low adenosin | Human adenosine re | Human low adenosin | Human adenosine re | Sequence encoding | Human low adenosin | . Human adenosine re | Human low adenosin | Human adenosine re | Asp41-Cytokine cod | Cytokine NC30. Q | Sequence encoding | Human low adenosin | Human low adenosin | Human adenosine re | Human adenosine re | Canine interleukin | Zea mays DNA fragm | S. coelicolor YesW | Rat DIDST CDNA. R | Human interleukin | -negati | Enhanced green flu | Enhanced blue fluo | Enhanced cyan fluo |      |      | DNA encoding ECFP | cDNA encoding a gr | the        |  |
|---|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|----------------------|--------------------|--------------------|--------------------|------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|---------|--------------------|--------------------|--------------------|------|------|-------------------|--------------------|------------|--|
|   | 255556             | 25553              | 255554        | 028944             | F21334             | A35212             | F21332             | A35210             | 056692            | F21333             | A35211               | F21338             | A35216             | 028943             | 028947           | 056693            | F21331             | F21337             | A35209             | A35215             | Z5552 ·            | C38383             | Z48297             | X78074            | Z32227            | V48405  | A93373             | 9337               | 37                 | 2757 | 57   | 2757              | m                  | 45         |  |
|   | 21                 | 21                 | 21            | 13                 | 21                 | 21                 | 21                 | 21                 | 12                | 21                 | 21                   | 21                 | 21                 | 13                 | 13               | 15                | 21                 | 21                 | 21                 | 21                 | 21                 | 21                 | $\vdash$           | 20                | 0                 | 9       | Η.                 | 21                 | 21                 | 21   | 21   | 21                | 21                 | 21         |  |
| ( | 1302               | 272                | 278           | 336                | 1270               | 1270               | 1282               | 1282               | 1290              | 6952               | 6952                 | 497                | 14978              | 336                | 1297             | 1212              | 5670               | 5670               | 5670               | 5670               | 166                | 479                | 1896               | 2792              | 99                | 772     | 717                | 717                | 717                | 717  | 717  | 717               | 720                | 720        |  |
|   |                    | ď                  | ė.            |                    | ė.                 | 9                  | ė.                 | ٠.                 | ė.                | ė.                 | 9                    | 9                  | ٠                  | 9                  | ٠                | 2                 | ή.                 | Ξ.                 | ä                  | ä                  | ή.                 | 0                  | 0                  | 10.2              | 0                 | 。       |                    | •                  |                    |      |      |                   |                    |            |  |
|   | 317                | 240                | $\rightarrow$ | 187.4              | 187.4              | 187.4              | 187.4              | 187.4              | 187.4             | 187.4              | 187.4                | 187.4              | 87.                | 85.                | 85               | 51.               | 71.4               | 71.4               | 71.4               |                    | 39                 | 34                 | m                  | 33.8              | ж<br>•            | 33.4    | 2                  | 32.4               | 32.4               | 32.4 | 32.4 | 32.4              | 32.4               | $^{\circ}$ |  |
|   | c 12               | 13                 | 14            | 15                 | 16                 | 17                 | 18                 | 19                 | 20                | 21                 | 22                   | 23                 | 24                 | 25                 | 56               | 27                | 28                 | 58                 | 30                 | 31                 | 32                 | 33                 | 34                 | c 35              | 36                | 37      | 38                 | 39                 |                    |      | 42   | 43                | 44                 | 45         |  |

## Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss. Canine mature interleukin-13 (IL-13) clone 78 cDNA. ВР 99WO-US11942. 98US-0087306 Z55565 standard; cDNA; 330 (first entry)

Wonderling RS;

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

Claim 1i; Page 241; 264pp; English.

Wonderling RS;

Yang S, Dreitz MJ,

Sim G,

(HESK-) HESKA CORP

WPI; 2000-072623/06

P-PSDB; Y58224

98US-0087306

28-MAY-1999; 29-MAY-1998;

```
$\times \times \
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩX
                                      Sequences encoding canine interleurs 11-13 clones 80
and 78 respectively. The invention relates to canine
11-4, canine or feline Flt-3 ligand, canine or feline
11-4, canine or feline Flt-3 ligand, canine IL-3, canine CD40, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins associated
colony-stimulatory proteins. The proteins and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
concerned for interapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
alleries, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisenses oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cagaatcaggcatccttctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 agccotgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 acccagaggatgctgaaagcactgtgctctcaaaaagcccgcggcagggatttccagtgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaggatttccagtgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine mature interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                         Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 330; DB 21; 100.0%; Pred. No. 1.3e-88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255566 standard; cDNA; 330 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 100. Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
```

```
sequences encoding cannon interleukin-13 (II-13) clones 80
and 78 respectively. The invention relates to canine
CC thick, canine or felline Fit-3 ligand, canine or felline CD154 (CD40 ligand), canine IL-3, canine IL-13, felline
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (GMCSF), and nucleotides which encode these
colony-stimulating factor (PMCSF), and nucleotides which encode these
colony-stimulating factor (PMCSF), and nucleotides which encode these
colony-stimulating factor (PMCSF), and inhibitors may be used as
colony-stimulating factor prophylactic requiation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
condulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210 ATGTACTGCGCAGCTCTAGAATCTCTGATCAATGTCTCCGACTGCAGCGCCATCCAAAGG 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acccagaggatgctgaaagcactgtgctctcaaaaagcccgcgggaaggatttccagtgaa 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 330; DB 21;
100.0%; Pred. No. 1.3e-88;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 aggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGGAGTTTATCGCCATGGAAATTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Z55563 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match
Best Local Similarity 100.
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255563
```

ó

```
241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggatttccagtgaa 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.
Best Local Similarity 100.
Matches 330; Conservative
                                                                            QQ
                                                                                                                   οy
                                         δ
                                                                                                                                                                                                                                                                                                                                                 Sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IEN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The prophlactic regulation of an immune
colony-stemplation proteins and inhibitors may be used as
uncleic acids, specific antibodies and inhibitors may be used as
concessions for inflammation and graft rejection, and to increase
they may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigon. The nucleotide sequences
can also be used for the recombinant production of a protein, while
concession inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
concession and activity, while the antibodies may be used in detection,
concession and activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                     response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
0
                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune resl
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 390;
                                                                          Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 330; DB 21;
100.0%; Pred. No. 1.4e-88;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                      Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 238-239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                  Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                     99WO-US11942.
                                                                                                                                                                                                                                                                                                                        98US-0087306
                                   14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best_Local Similarity 100.
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                       2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                      Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; Y58223.
                                                                                                                                                                                                         WO9961618-A2,
                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sednences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
255563;
                                                                                                                                                                                                                                                                                                                                                                                                    Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
```

```
sequences encoding canine interleuking Int-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
andulators of activity, while the antibodies may be used in detection,
                                            Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
241 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wonderling RS;
                                                                                                                                                                                                   301 aggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1i; Page 239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                          BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                  Z55564 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                  Z55564/c
```

ö

Gaps

ö

Length 390; Indels

Score 330; DB 21; Pred. No. 1.4e-88; 0; Mismatches 0;

100.0%;

accagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa 240

181

g à Ob ò 셤 ò

```
29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                       z55562;
                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                     357
                                                                                                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Key
                                                                                                                                                                                                                                                                                                                                                                  Z55562,
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                      a
                                                                                                                                                               ð
                                                                                                                                                                                            à
                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                 240
                     271
                                                    211
                                                                   180
                                                                                   151
                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            colony-stimulating factor (GMCSF), and nucleotides which encode these
                                                                                                                91
                                                                                                                                             31
                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       canine
                                                                                                                               acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa
       agecetgtgaetecetececaaceeteaaggageteattgaggagetggtcaacateace
                                                                                                                ACCCAGAGGATGCTGAAAGCACTGTGCTCTCAAAAGCCCGCGGCAGGGATTTCCAGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD40, can feline CD46 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage
                                                                                                                                                                                                                                                                                                                                          78
                                                                                                                                                                                                                                                                                                                                          "Canine IL-13 clone
                                                                                                                                                                                                                                                               Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                                                                              aggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 11; Page 235-236; 264pp; English.
                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                 Z55561 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                      99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                      98us-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                         57..449
/*tag= a
/product=."
                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                    Canis familiaris,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                         WO9961618-A2
                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                   ပ်
                                                                                                                                                                                                                                255561;
                                                                                                                                                                                                   ഗ
                     330
                                                                                                                                                            301
                                                                                                                                                                           30
                                     61
                                                   270
                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim
                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                         255561
                  q
                                                                                                               Q
                                                                                                                                          Q
                                                                                                                                                                                                                         ò
                                                g
                                                                   ò
                                                                              g
                                                                                               ò
                                                                                                                               ð
                                                                                                                                                            ò
                                                                                                                                                                           g
```

```
ö
                                    vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggatttccagtgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta
                   specific antibodies and inhibitors may be used as
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                       Length 1269;
immunoregulatory proteins. The proteins, their associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.0%; Score 330; DB 21; Best Local Similarity 100.0%; Pred. No. 2.1e-88; Matches 330; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 aggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualiflers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2/c
255562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US11942,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                    and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                      nucleic acids,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-DEC-1999
```

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
     Canine mature interleukin-13 (IL-13) clone 80 cDNA
                                                                                                       WPI; 2000-072623/06.
                                                                                   (HESK-) HESKA CORP.
                                Canis familiaris.
                                                                                                             P-PSDB; Y58222
                                         WO9961618-A2.
                                                              28-MAY-1999;
                                                                        29-MAY-1998;
                                                    02-DEC-1999.
                                                                                             Sim G,
 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                              Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
               Wonderling RS;
                                                        Claim 11; Page 237-238; 264pp; English
               Yang S, Dreitz MJ,
                                                                                                                                                                    and in drug targetting..
                         2000-072623/06
    (HESK-) HESKA CORP.
                               P-PSDB; Y58223
               Sim G,
```

Wonderling RS;

Yang S, Dreitz MJ,

99WO-US11942 98US-0087306

> Gaps ; 0 Length 1269; Indels 100.0%; Score 330; DB 21; 100.0%; Pred. No. 2.1e-88; Live 0; Mismatches 0; Ouery Match 100. Best Local Similarity 100. Matches 330; Conservative

. 0

974 1033 AIGTACTGCGCAGCTCTAGAATCTCTGATCATGTCTCCGACTGCAGGCCCTCTCCAAAGG acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggatttccagtgaa cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 973 241 181 g à g ò qq ò QQ õ

301 aggggagtttatcgccatggaaatttcaga 330 ò q

ΟD

Z55559 standard; cDNA; 333 RESULT Z55559 XX

14-MAR-2000 (first entry)

BP.

gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 297 Conservative Best Local Similarity Matches 330; Conserv Query Match 61 61 121 121 181 181 ò q ò g à pp ð 

and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine CL-4, canine or felline Fit-3 ligand, canine IL-13, felline cor felline Fit-3 ligand, canine IL-13, felline cor felline Fit-3 ligand, canine IL-5, canine IL-13, felline interferon-alpha (IFN-alpha) and felline granulocyte macrophage colony stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and in detection, and in the constitution of a constitu Ϊ; cagaatcaggcatccctctgcaacggcagcatggtgtggaagcgtcaacctgaccgccggc 120 180 237 Gaps 9 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease 1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt acccagaggatgctgaaagcactgtgctctcaaaagcccgcggggagggcagatttccagt 96.1%; Score 317; DB 21; Length 333; 99.1%; Pred. No. 9.2e-85; ive 0; Mismatches 0; Indels 3 Indels Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other; Claim 11; Page 233-234; 264pp; English. and in drug targetting.

333 AGCCCTGTGCCTCCCCAACCCTCAAGGAGCTCATTGAGGAGCTGGTCAACATCACC

```
qq
                                                                                                     δy
                                                                                                                                     g
                                                                                                                                                                                                     op
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                         g
                                   ò
                                                                                                                                                                        ò
                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequences 25552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Fit-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                 241 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 300
                                                                                                                                                                                                                                                                                                       Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ, Wonderling RS;
                                                  Claim 11; Page 235; 264pp; English.
                                                                                                                                                                  Z55560 standard; cDNA; 333 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                          Canls familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; Y58222.
                                                                                                                                                                                                                                                                                                                                                                                           WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                                                                                                                                                                       14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                           02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sim G,
                                                                                                                                                                                                     Z55560;
                                                                                                                                                    255560/
ID 25
                                                                                q
                                                                                                                                                                                      ò
```

```
sequences 25552-25560 and 25561-25566 represent.cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
CE IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
CE IL-4 canine or feline Flt-3 ligand, canine or feline CD40, canine or
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 297
                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                            cagaatcaggcatccttgcaacggcagcatgtgtgtgagcgtcaacctgaccgccggc
                                          93 GAACGCAGCCGAGACACCAAAATTGAAGTGATCCAGTTGGTGAAAAACCTGCTCACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 80 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1i; Page 232-233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z55557 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z55557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A PART A
```

7;

Gaps

.. m

Score 317; DB 21; Length 333; Pred. No. 9.2e-85; 0; Mismatches 0; Indels

sch 11 Similarity 99.1%; 330; Conservative 0

Query Match Best Local S

Matches

ò

1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 60

```
ä
             as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
nucleotide fragments are useful as probes, as amplification primers and
                                                                                                                                                                                                                                            atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                   181 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 240
                                                                                                                                                                                                                                                                                                                                                                                     241 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagggcagatttccagt 300
                                                                                                                                                                                                                                                                                                                                                                                                                    gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 297
                                                                                                                                                                                                                                                                                                                                                                                                                                             301 gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat 360
                                                                                                                                                           Gaps
                                                                                                                                                                                       agccctglgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                           acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune respons
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                           3;
                                                                                                                              Score 317; DB 21; Length 393; Pred. No. 9.8e-85;
                                                                                                                                                         Indels
                                                                                Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         298 gtaaggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 11; Page 233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18/c
255558 standard; cDNA; 393 BP
                                                                                                                              96.1%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-MAR-2000 (first entry)
                                                                                                                           Query Match 96.17
Best Local Similarity 99.17
Matches 330; Conservative
                                                         and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-072623/06.
P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
252225X8
                                                                                                                                                                                     ð
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
Sequences encoding canine interior (11.13) clones 80
and 78 respectively. The invention relates to canine
L1-4, canine or felline Flt-1 sligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine L1-3, felline
interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony stimulating factor (GMCSF), and nuclectides which encode these
immunoregulatory proteins. The proteins, their associated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allerities, fundours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides)
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 atglactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 ATGTACTGCGCAGCTCTAGAATCTCTGATCATGTCTCCGACTGCAGCGCCATCCAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                 Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
Sequences 25552-25550 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                              Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a /product= "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                               Score 317; DB 21;
Pred. No. 9.8e-85;
                                                                                                                                                                                                                                                                                                                                                                                               96.1%; Scor.
99.1%; Pred. No. >:-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtaaggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 99.1
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..447
                                                                                                                                                                                                                                                                                                                             and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25555;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
```

ï

8

```
Z55556 standard; cDNA; 1302 BP.
                  255556/c
                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nuclectide sequences can also be used for the recombinant production of a protein, while nuclectide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonuclectides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                        sequences encoding can be interleukin-13 (IL-13) clones 80 and 78 respectively. The inversion relates to canhe and 78 respectively. The inversion relates to canhe and 78 respectively. The inversion relates to canhe EL-13, feline fellone CD154 (CD40 ligand), canhe IL-5, canhe IL-13, feline interferon alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (6MCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagaatcaggcatccctctgcaacggcatgatgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                           Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttccagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96.1%; Score 317; DB 21; Length 1302; 99.1%; Pred. No. 1.5e-84; 1.ve 0; Mismatches 0; Indels 3
                                                                                                                                                                                                                                                                                                                         Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                                                                            Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; Page 229-230; 264pp; English
                                                                                                                                                            Yang S, Dreitz MJ,
                                                               99WO-US1.1942.
                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 99.1 Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and in drug targetting.
                                                                                                                                                                                            WPI; 2000-072623/06.
                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                             P-PSDB; Y58221
WO9961618-A2.
                                                                                              29-MAY-1998;
                                                              28-MAY-1999;
                               02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                              Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298
```

g ò 8 ò Q Ω

ò

ò q ò

```
condences encoding canine interleuring (II-13) clones 80
and 78 respectively. The invention relates to canine
LL-4, canine or feline flt-3 ligand, canine IL-13, feline
IL-4, canine or feline flt-3 ligand, canine IL-13, feline
LL-4, canine colory canine IL-5, canine IL-13, feline
interferon-alpha (FN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The prophylactic regulation of an immune
colony-stimulatory proteins. The prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96.1%; Score 317; DB 21; Length 1302; 99.1%; Pred. No. 1.5e-84; ive 0; Mismatches 0; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                              Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product= "Canine IL-13 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 11; Page 231-232; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087306
                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-072623/06.
P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                       Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                         14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
Z55556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
```

ij

9

us-09-451-527-104.rng

```
Z5554
                                                                                                                                                                                                                                                                                                                                                                                                                                  SXCC
                                                                                                                                                                  δ
                                                                                                                                                                                         g
                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequences 25552-25560 and 255561-25556 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respecitively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and incleotides may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
modulators of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                    1131 CAGAATCAGGCATCCCTCTGCAACGCCAGGCATGCTGGAGCGTCAACCTGACCGCGGC 1072
                                                                                                                                                     Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                  acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt
                                                                                                                                         gaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctat
                                                                                                                                                                                                                                                                                                                                                        interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling RS;
                                                                                                                                                                                        298 gtaaggggagtttatcgccatggaaatttcaga 330
                                                                                                                                                                                                     Claim 1i; Page 228; 264pp; English.
                                                                                                                                                                                                                                                                              BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                             Z55553 standard; cDNA; 272
                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                     Cants familiaris.
                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1999.
                                                                                                                                                                                                                                                                                                     255553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim G,
                                                                                       181
                                                                                                               1011
                                                                                                                                       238
             Ω
                                                           g
                                                                                     ò
                                                                                                             g
                                                                                                                                     ò
                                                                                                                                                            QQ
                                                                                                                                                                                        ò
                                                                                                                                                                                                              g
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD14 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
                                                                                                                                                                                                                                                                                                         cagaatcaggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                         acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttccagt 237
                                                                                                                                                        Gaps
                                                                                                                                                                                                9
                                                                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from cats or dogs, autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                           immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                   121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                        3;
                                                                                                            Length 272;
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding immunoregulatory proteins useful for treating or preventing e.g. tumors or
                                              69 G; 48 T; 0 other;
                                                                                                            21;
                                                                                                         72.7%; Score 240; DB 21;
98.8%; Pred. No. 5.7e-62;
iive 0; Mismatches C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine interleukin-13 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 11; Page 229; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP
                                                ပ်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255554 standard; cDNA; 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                              Sequence 272 BP; 64 A; 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaacgcagccgagaca 253
and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                            Query Match
                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z5554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                             137
                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
```

Claim 11; Page 60; 78pp; French.

```
ó
           response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                         cagaatcaaggcatccctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                          Labit-le Bouteiller C;
                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                          1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc
                                                                                                                                                                                                                                                                                                                                                                    atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                 for therapeutic or prophylactic regulation of an immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1..336
/*tag= a
/note= "encodes Gly at position 41 of cytokine"
                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                   Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Interleukin; chemotaxis; immunomodulation; inflammation; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                              Indels
                                                                                                                                                            Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                     DB 21;
1.9e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                        acccagaggatgctgaaagcactgtgctctcaaaagcc 218
                                                                                                                                                                                                                                                                                                                                                                                                                                      Kaghad M,
                                                                                                                                                                                                  66.1%; Score 218; DE 100.0%; Pred. No. 1.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gly41-Cytokine coding sequence Na1'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Guillemot J,
M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                     Query Match 66.1
Best Local Similarity 100.
Matches 218; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q28944 standard; DNA; 336
                                                                                                                                   and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caput D, Ferrara P,
Leplatois P, Magazin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; R27347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-MAR-1.992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EP506574-A
 vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              028944;
                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        028944
888888888888888888
                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gcatgtactgcgcagetetagaatetetgateaatgteteegaetgcagegeeateeaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gcttgcatgtccgagacaccaaaatcgaggtggcccagtttgtaaaggacctgctcttac 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                T lymphocytes were induced by phorbol-2-myristate-3-acetate (PMA) and phytohaemaglutinin (PHA). Poly (A)+ RNA was isolated from the cells and reverse transcribed to CDNA. The CDNA was subjected to hybridisation with polyA RNA from the monkey kidney cell line COS3. DNA specific for peripheral blood mononuclear cells (PBMC) (i.e. which did not hybridise) was cloned in pSEI to construct a DNA bank. The bank was screened with CDNA prepared from PBMC which had been stimulated with PMA (and opt.PHA) and with a mixture of
                                                                                                                                                                                     oligonucleotides specific to other cytokines. One positive clone (i.e. which hybridised more strongly to cells induced with PHA and PMA, c.f. PMA alone, and did not hybridise to known cytokine probes) was designated pSEI NG30. It included a 1282 bp ORF with two potential ATG initiation codons and four potential signal sequence cleavage sites. A second positive clone differed only in the identity of codon 41 which was GGC (Gly) in stead of GAC (Asp)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 gecetytyaetecetececaaceeteaaggageteattyaggagetggteaaeateaeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182 agacccagaggatgctgagcggattctgcccgcacaaggtctcagctgggcagttttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg...gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 187.4; DB 13;
Pred. No. 2.4e-46;
                                                                                                                                                                                                                                                                                                                                                                      Sequence 336 BP; 80 A; 95 C; 90 G; 71 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         completed: May 13, 2001, 14:30:26
                                                                                                                                                                                                                                                                                                                                                                                                                              56.8%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                See Q28941-Q28947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search completed: Ma
Job time: 18341 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
```

3

```
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
                                                                                                                     May 13, 2001, 14:21:44; Search time 226.02 Seconds (without alignments) 254.928 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   App1
App1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              App]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 24, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                     1 agccctgtgactccctcccc.....atcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, b
Sequence 15,
Sequence 4, b
Sequence 4, b
Sequence 1, b
Sequence 1, b
Sequence 2, b
Sequence 3, b
Sequence 3, b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1
Sequence 1
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2
Sequence 2
Sequence 2
Sequence 2
Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seguence
                                                                                                                                                                                                                                                                                                                                                                                                     605242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgnl_7/ptodata/1/ina/5A_COMB.seq:*
/cgnl_7/ptodata/1/ina/5B_COMB.seq:*
/cgnl_7/ptodata/1/ina/6A_COMB.seq:*
/cgnl_7/ptodata/1/ina/6B_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seq:*
/cgnl_7/ptodata/1/ina/PCTUS_COMB.seq:*
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US93-07645-1
US-08-371-121-2
US-08-371-121-15
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-062-102-2
US-09-172-063-27
US-09-172-063-29
US-09-085-305-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-906-957-1
US-08-371-121-26
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -09-172-063-13
-08-532-390-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -08-717-294-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -09-128-450-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -09-172-063-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-906-957-4
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -09-094-359-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-094-359-7
                                                                                                                                                                                                                                                                                                                                                          302621 segs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                  - nucleic search, using sw model
                                                                                                                                                                                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_NA:*
                                                                                                                                                                                                          US-09-451-527-104
                                                                                                                                                                                                                                                                                                                                                                                                                                            length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1290
1290
1290
336
1297
384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 5 .. ..
                                                                                                                                                                                                                                                                                                                                                                                                                                              sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187.4
1187.4
1187.8
1187.8
1188.8
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
1188.6
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                  OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
8
                                                                                                                                                                                                            Title:
```

| Sequence 1, Appli<br>Sequence 5, Appli<br>Sequence 1, Appli<br>Sequence 3, Appli<br>Sequence 3, Appli<br>Sequence 7, Appli<br>Sequence 7, Appli<br>Sequence 1, Appli<br>Sequence 2, Appli<br>Sequence 2, Appli<br>Sequence 2, Appli<br>Sequence 2, Appli<br>Sequence 3, Appli<br>Sequence 630, Appli<br>Sequence 630, Appli<br>Sequence 630, Appli<br>Sequence 13, Appli<br>Sequence 14, Appli<br>Sequence 12, Appli<br>Sequence 12, Appli<br>Sequence 11, Appli<br>Sequence 11, Appli<br>Sequence 11, Appli   | kine type<br>bk coding for this protein,<br>microorganisms.  | on #1.25   |
|--|--|--|
| US-08-818-253-1<br>US-08-818-253-5<br>US-08-818-252-1<br>US-08-818-252-5<br>US-08-818-253-3<br>US-08-818-253-7<br>US-08-818-253-7<br>US-08-818-253-7<br>US-08-918-253-7<br>US-09-331-581-14<br>US-09-305-681-2<br>US-09-056-630<br>US-09-060-756-630<br>US-09-172-063-14<br>US-09-172-063-14<br>US-09-172-063-17   | ALIGNMENTS  24  Application US/08371121  56552133  T: CAPUT, Daniel  T: CAPUT, Daniel  T: CAPUT, Daniel  T: CAPUTLLEMOT, Jean-Claude  T: LEPLATOIS, Pascal  T: KAGHAD, Mourad  T: KAGHAD, Mourad  T: LABIT-LE BOUTEILLER, Christine  T: MAGAZIN, Marilyn  INVENTION: Protein having a cytokine ty  INVENTION: PROTEIN ACTIVITY, recombinant DNA co  INVENTION: Transformed cells and microo  NDENCE ADDRESS:  SEE: FOLEY & LARDNER  ** 3000 K Street, N.W., Suite 500  ** 3000 K Street, N.W., Suite 500  ** USA  | disk<br>patible<br>-DOS/MS-DOS<br>elease #1.0, Version<br>A:<br>US/O8/371,121<br>US 07/938,161<br>1992<br>PCT/FR92/00280   |
| 1929 2 US 1929 2 US 1929 4 US 1959 4 US 1959 5 US 1959 6 US 1950 7   | SULT 1 -08-371-121-24 Sequence 24, Application US/0837112 Patent No. 5552123 GENERAL INFORMATION: APPLICANT: CAPUT, Daniel APPLICANT: FERRARA, Pascual APPLICANT: ELEPLATOIS, Pascal APPLICANT: LEPLATOIS, Pascal APPLICANT: LEPLATOIS, Pascal APPLICANT: MAGAZIN, MOUTED APPLICANT: KAGHAD, MOUTED APPLICANT: KAGHAD, MOUTED APPLICANT: KAGHAD, MOUTED APPLICANT: MAGAZIN, MATIYN TITLE OF INVENTION: Protein hav TITLE OF INVENTION: activity, ranger of INVENTION: transformed NUMBER OF SEQUENCES: ADDRESSEE: FOLEY & LARDNER STREET: 3000 K Street, N.W., CITY: Washington, D.C. COUNTRY: USA   | ZIP: 20007-5109 MMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: Elbe PC compatible COMPTUTER: Elbe PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PATCHTIN RELEASE #1.0, RNEWT APPLICATION DATA: APPLICATION NUMBER: US/08/371,12 FILING DATE: APPLICATION DATA: APPLIC |
| $\begin{array}{c} \mathbf{Q} & $ | 1. 1 1. 24  uence 24 Application US/0837 ent No. 5652123 APPLICANT: CAPUT, Daniel APPLICANT: CAPUT, Daniel APPLICANT: GILLLEMOT, Jean-Cl APPLICANT: GILLLEMOT, Jean-Cl APPLICANT: MINTY, Adrian APPLICANT: KAGHAD, MOUTAGA APPLICANT: KAGHAD, MOUTAGA APPLICANT: MAGAZIN, MATIJN TITLE OF INVENTION: Protein ITITLE OF INVENTION: Protein ITITLE OF INVENTION: ACLIVITY TITLE OF INVENTION: ACLIVITY TITL | ZIP: 20007-5109 CMDUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compati<br>OPERATING SYSTEM: PC-DOS SOFTWARE: PATENTIN Relea CURRENT APPLICATION DATA: APPLICATION: 435 FILING DATE: CLASSIFICATION: 435 APPLICATION NUMBER: US O FILING DATE: 30-NOV-1992 PRIOR APPLICATION DATA: FILING DATE: 27-MAR-1992   |
| 2000 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8   | RESULT 1 US-08-371-121-24 Sequence 24, Applicat Patent No. 555213 APPLICANT: CAPUT, APPLICANT: FERRAR, APPLICANT: LEPLAT APPLICANT: LEPLAT APPLICANT: MAGNII   | AMPUTER READABLE MEDIUM TYPE: COMPUTER: IBM FOODERATING SYSTEM SOFTWARE: PACE SOFTWARE: SOFTWARE |
| 0<br>22<br>33<br>33<br>33<br>34<br>44<br>44<br>44<br>44<br>44<br>44<br>44<br>44<br>44  | RESULT US-08-3-3 Seque Seque Patent APP APP APP APP APP APP APP APP APP AP   | 00 00 84 84  |

```
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                              5;
                                                                                                                                                                                                                                                                                                                             agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                             62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGAGCATCAACCTGACCAGCGCTC 121
                                                                                                                                                                                                                                                                                                                                                                                            gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                              gtgaacgcagagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 301
                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                             2 gccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcaccc 61
                                                                                                                                                                                                                                                                                2 GCCCTGTGCCTCCTACAGCCCTCAGGGGGGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182 AGACCCAGAGGATGCTGAGCGGATTCTGCCGCGACAAGGTCTCAGCTGGGGGAGTTTTCCA
                                                                                                                                                                                              DB 1; Length 336;
                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                             56.8%; Score 187.4; DB 1
76.9%; Pred. No. 2.1e-50;
tive 0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/012,543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 1, Application US/08012543
; Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
                                                                                                             TOPOLOGY: linear

MOLECULE TYPE: DNA (genomic)

US-08-371-121-24
                                  24:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Aversa, Gregorio
Briere, Francine
      TELEFA: 904136
INFORMATION FOR SEQ ID NO: 24
SEQUENCE CHARACTERISTICS:
LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1993
   (202) 672-5399
                                                                                                                                                                                                                              Conservative
                                                                                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: HUNDER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Palo Alto
STATE: California
                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 256; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    296
                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                 . d
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              346 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCACTTTGTAAAGGACCTGCTCTTAC 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         286 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106 GCCCTGTGCCTCCTCTACAGCCCTCAGGAGCTCATTGAGGAGCTGGTCAACATCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            166 AGAACCAGAAGGCTCCGCTCTGCAATGCAGCATGGTATGGAGCATCAACCTGACAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 gocotgigactocotococaacoctoaaggagotoattgaggagotggtoaacatoacoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 187.4; DB 1;
Pred. No. 3.5e-50;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        406 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                   DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application PC/TUS9307645A GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
                                                                                                              34,090
                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                   TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human NUMBER OF SEQUENCES: 6 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                       NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                      1290 base pairs
                                                                                                                                                                                                                                                                                         nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                 45..443
                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY: CDS
; LOCATION: 45..
US-08-012-543-1
                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                  LENGTH:
```

ä

```
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Wa
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
US-08-371-121-2
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                            pp
                                                                                                         ŏ
                                                                                                                                          PP
                                                                                                                                                                              δ
                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                      δŏ
                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                                                                                                                                                                                                                                                                             gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 226 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 285
                                                                                                                                                                                                                                                                                                                                                                        62 agaatc---aggcatccctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  286 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                                                                                                                                                                                                                                                                                                                     106 GCCCTGTGCCTCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 165
                                                                                                                                                                                                                                                                                                                                                                                                          166 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 225
                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                      gccctgtgactccctcccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                               Length 1290;
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                                             Score 187.4; DB 5
Pred. No. 3.5e-50;
0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human Interleukin-13
MUBBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Microsoft Wood 5.18
SOFTWARE: Microsoft Wood 5.18
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN 1993
PRIOR APPLICATION DATA:
FILING DATE: 29-JAN 1993
                           APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INPORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                             56.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-AUG-1992
29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 1290 base pairs
                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: double
                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
PCT-US93-07645-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US93-07645-1
                                                                                                                                                                                                                                                                Matches 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        346
                                                                                                                                                                                                                                                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
;;
;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: MAGAZIN, MAILLYN
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                           166 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTG 225
                                                                                                                                                                                                                                                                        286 AGACCCAGAGGGGTGTGAGGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 405
                                              Gaps
                                                                                        61
                                                                                      2 gccctgtgactccctcccaacctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                    226 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA
                                                                                                                                                                                                                                                                                                                                                                 179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                              9
    Length 1290;
                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
Score 187.4; DB 5;
Pred. No. 3.5e-50;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             406 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 07/938,161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAPUT, Daniel
FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IBM PC compatible
Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: MINTY, Adrian APPLICANT: KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 30-NOV-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 08-JAN-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE
```

```
FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; LOCATION:
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: MINTY, Addian
APPLICANT: KAGHAD, Mourad
APPLICANT: KAGHAD, Mourad
APPLICANT: MAGAZIN, MOURAD
APPLICANT: MAGAZIN, MATILYN
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 AGAACCAGAAGGCTCCGCTCTGCAATGGCAGGGTGGTATGGAGCATCAACCTGACAGCTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGGCAGTTTTCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTGTAA 301
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                      gccctgtgactcccccaaccctcaaggagctcattgaggagctggtcaacatcaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 GCCCTGTGCCTCCCTCTACAGCCCTCAGGGAGCTCATTGAGGAGCTGGTCATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                               Length 336;
                                                                                                                                                                                                                                                                                                                                                                           Query Match 56.3%; Score 185.8; DB 1; Best Local Similarity 76.6%; Pred. No. 6.7e-50; Matches 255; Conservative 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   302 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                      NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28,665
REGISTRATION NUMBER: 16781/383
TELECOMMUNICATION:
TELECOMMUNICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 15, Application US/08371121
; Patent No. 5652123
                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOLEY & LARDNER
                 FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                               TELEPHONE: (202) 672-536
TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                          LENGTH: 336 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAPUT, Daniel
                                                                                                                                                                                                                                                                 single
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20007-5109
                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                     US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
238 ACATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURREMY APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 185.8; DB 1;
Pred. No. 1.1e-49;
0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               418 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 450
                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30.NOV-1992
PRIOR APPLICATION NUMBER: US 07/938,161
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27.MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAKE, BERTHARD D.
REGISTRATION NUMBER: 16781/383
TELECOMMULICATION INFORMATION:
TELECOMMULICATION INFORMATION:
TELECOMMULICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56.3%;
76.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (202) 672-539
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1297 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (202) 672-539'
TELEX: 904136
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouery Match
Best Local Similarity 76.6
Matches 255; Conservative
                                                                                                                                                                  CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: CDNA
```

5

```
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: presence of arginine
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bacon & Thomas
STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
                               236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                  179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggagg---gatttcca 235
                                                                                                                                                                                  119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                        203 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGGGAGTTTTCCA
                                                                                                                                                                                                                                                             323 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 355
                                                                                                                                                                                                                                       296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/08594469 Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: FICHTER, Richard E
RECISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REI
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: DNA (genomic)
US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: (703) 683-0500 TELEFAX: (703) 683-108 INCORNATION FOR SEQ ID NO: 4: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55.3%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             425 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 253; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                      US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                     g
                                                                                                                                                                                                g
                                                                                                                                                                                                                                     δλ
                                                                                  ŏ
                                                                                                                                                             ò
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ς;
                                                                                                                                                                                                                                  Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gccctgtgactccctcccaacctcaaggagctcattgaggagctggtcaacatcaccc 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23 GCCCTGTGCCCTCCTCTACGGCCCTCAGGGAGCTCATTGAGGAGCTGGTCAACATCACCC 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 184.2; DB ]
Pred. No. 2.3e-49;
0; Mismatches 73
                                                                                                                                                                                            APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cyto)
                                                                                                                                                                                                                                                                                                                                3: FOLEY & LARDNER
3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILOPICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                              FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                     Sequence 17, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 167
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: DNA (genomic) US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 55.8%;
Best Local Similarity 76.3%;
Matches 254; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (202) 672-5300
                                                                                                                                                         APPLICANT: MINTY, Adrian APPLICANT: KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 384 base pairs
nucleic acid
EDNESS: double
                                                                                CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                     Washington, D.C.
                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                              APPLICANT: MAGAZIN, ITILE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                         20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
                                                                                                                                     APPLICANT:
APPLICANT:
US-08-371-121-17
                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                     CITY: Wa
COUNTRY:
                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

```
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 gccctytgactccctccccaacctcaaggagctcattgaggagctggtcaacatcaccc 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
SOFTWARE: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/OR/FO/FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 182.6; DB 1;
Pred. No. 7.5e-49;
0; Mismatches 74;
```

ñ

Pred. No. 7.5e-49; ); Mismatches 74; Indels

ö

76.08;

```
Conservative
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                 253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
US-08-594-469-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                qq
                                                                                                                   ò
                                                                                                                                                  g
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: SALOME, Marc TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the TITLE OF INVENTION: presence of arginine
                                                184
                                                                              245 AGACCCAGAGGATGCTGAGGGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 304
                                                                                                                                                                                                                                                    305 GCTTGCATGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAAGGACCTGCTCTTAC 364
                                                                                                                                                                                                                   gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct
                                 185 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA
                                                                                                                                                179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcgggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                      365 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                     atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: FICHTER, RICHARD E
REGISTRATION NUMBER: 26,382
REFERNCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION:
TELECHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 06-AUG-1997
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4, Application US/08906957 Patent No. 5856142 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (703) 683-0500
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          625 Slaters Lane
                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: LEGOUX, Richard APPLICANT: MALDONADO, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: Virginia COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE:
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
STREET: 62
                                                                                                                                                                                                                                                                                                                                                                                     US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
                                                                                                                                                                                                                   236
                                                                                                                                                                                                                                                                                     296
                                        8
                                                                                ď
                                                                                                            g
                                                                                                                                                                          qq
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                  ò
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                     ò
```

```
method for the extraction of periplasmic proteins of prokaryotic microorganisms in the presence of arginine
                                                                                  185 GCATGTACTGTGCAGCCCTGGAATCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGA 244
                                                                                                                                                                                                                                                                         235
                                                                                                                                                                                                                                                                                                                                                                236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                          245 AGACCCAGAGGATGCTGAGCGGATTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCA 304
2 gecetgtgactecetececeaaceeteaaggageteattgaggagetggteaacateacee
                                                                                                                                                                              119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa
                                                                                                                                                                                                                                                                       179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg...gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OFERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 365 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8: Bacon & Thomas
625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: FICHTER, RICHARD E
REGISTRATION VMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
TELEPHONE: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/594,469 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/08594469 Patent No. 5700665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: LEGGOUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for TITLE OF INVENTION: periplass
TITLE OF INVENTION: presence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Alexandria STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: Virginia COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
```

Query Match

```
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 26, Application US/08371121 Patent No. 5652123
                                                                                ; MOLECULE TYPE: DNA (genomic) US-08-906-957-1
                                                                                                                                                      55.3%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                 LENGTH: 4410 base pairs TYPE: nucleic acid
                                                                                                                                                                                        Matches 253; Conservative
SEQUENCE CHARACTERISTICS
                                 TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                  linear
                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: . USA
ZIP: 20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вp
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                           δŏ
                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                            ó
                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08906957
Patent No. 5856142
GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: MALDONADD, Paul
APPLICANT: MALDONADD, Paul
APPLICANT: MALDONADD, Paul
APPLICANT: Machod for the extraction of
TITLE OF INVENTION: persplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                    5
                                                                                                                                                                                      agaatc---aggcatcctttgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                       gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                        ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca 235
                                                                                                                                                                                                                                                                                                                                           236 gtgaacgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacct 295
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                   2 goootigtgactcootcoccaaccotcaaggagotcattgaggagotggtcaacatcaccc 61
                                                                                  9
                                               Length 4410;
                                                                                74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                 DB 1;
                                                                Pred. No. 1.8e-48, 0; Mismatches 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                           296 atgtaaggggagtttatcgccatggaaatttca 328
                                               55.3%; Score 182.6; 76.0%; Pred. No. 1.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, RICHARD E
REGISTRATION NUMBER: 26,382
REPERENCE/POCKET UNBER: REF/LEGOUX
TELECOMMUNICATION:
TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/906,957
FILING DATE: 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC Compatible OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORRESTORT.
ADDRESSEE: Bacon & Incomer
STREET: 625 Slaters Lane -
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                Matches 253; Conservative
                                                 Query Match .
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-906-957-1
US-08-594-469-1
                                                                                                                                                                                    62
                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                         179
                                                                                                                                                                                                                                                                                                                                                                                                                             642
                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                   a
                                                                                                                                                                                    ò
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
```

```
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                          62 agaatc---aggcatccctctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                               119 gcatgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaa 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              236 gigaacgcagccgagacaccaaaaiigaagigaiccagiiggigaaaaaccigcicacci 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                              2 gecetgigacicectececaacecicaaggageicatigaggageiggicaacaicaeee
                                                                                                                                                                                                                          179 ggacccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagg---gatttcca
                                                                                                                                                                                                                                                                                                                                                                                                                           ..
9
  Length 4410;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
  DB 2;
Score 182.6; DB 2
Pred. No. 1.8e-48;
                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: MINTY, Adrian
APPLICANT: MARIAN MOUTED
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296 atgtaaggggagtttatcgccatggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            702 ATTTAAAGAAACTTTTTCGCGAGGGACGGTTCA 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
```

```
CORRESPONDENCE ADDRESS
                                                         CITY: P
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cagaatcaggcatccctctgcaacggcagcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 CAAGACCAGACTCCCCTGTGCAACGGCAGGATAGGAGTGTGGGACCTGGCCGCTGGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 ACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCCCACTACGGTCTCCA---- 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acccagaggatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.9%; Score 151.4; DB 1;
68.8%; Pred. No. 5.8e-39;
tive 0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
VENTION: Human Interleukin-13
                                                                                                                                                                                                                         16781/383
                     APPLICATION NUMBER: PCT/FR92/00280
                          APPLICATION NUMBER: FULFERS/USEQUENCY PRIOR APPLICATION NUMBER: FF 91 00137 FILLING DATE: 08-JAN-1992 PRIOR APPLICATION NUMBER: FF 91 00304 PRIOR APPLICATION NUMBER: FF 91 03904 FILLING DATE: 29-MAR-1991 ATTORNEY/AGENT INFORMATION: NAME: SAXE, BENDIABER: 28,665 REGISTRATION NUMBER: 28,665 RESERENCE/DOCKET NUMBER: 16/19/38: TELECOMMUNICATION INFORMATION: TELECHAND (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCAACTGTTTCGCCACGGCCCCTTC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 aggggagtttatcgccatggaaatttc 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/08012543 Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                         LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                               TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dang, Warren
                                                                                                                                                                                                                                                                                                                                                                                             single
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 225; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Culpep
                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
181 acccagaggatgetgaaagcactgtgeteteaaaagceeggggagggattteeagtgaa 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 cagaatcaggcatccctctgcaacggcatggtgtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       262 GGGTTCTGTGTAGCCCTGGATTCCCTGACCATCTCCAATTGCAATTGCCATCTACAGG 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 cgcagccgagacaccaaaattgaagtgatccagttggtgaaaaacctgctcacctatgta 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142 AGATCTGTGTCTCTCCCTCTGACCCTTAAGGAGCTTATTGAGGAGCTGAGCAACATCACA 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 agccctgtgactccctccccaacctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202 CAAGACCAGACTCCCCTGTGCAACGCCAGCATGTATGAGTGTGGAGTGTGGCCGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 151.4; DB 1; Length
Pred. No. 8.5e-39;
0; Mismatches 96; Indels
                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/012,543 FILING DATE: 01-FEB-1993 CLASSIFICATION: 435
E: DNAX Research Institute 901 California Avenue
                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 aggggagtttatcgccatggaaatttc 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436 AAGCAACTGTTTCGCCACGCCCCTTC 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
PCT-US93-07645A-3
Sequence 3, Application PC/TUS9307645A
Sequence 3, APPLICATION:
APPLICANT:
                                                                                                                                                                                                     PC-DOS/MS-DOS
                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                  34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.9%;
68.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 68.8
Matches 225; Conservative
                                                                                                    ZIP: 94304-1104
COMPUTER READABLE FORM:
                                            Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70..465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                        COUNTRY:
```

```
Search completed: May 13, 2001, 14:21:47
Job time: 17858 sec
                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 acccagagatgctgaaagcactgtgctctcaaaagcccgcggcagggatttccagtgaa 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202 CAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGGACCTGGCCGCTGGC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 agocotigitgactocotococaacotocaaggagotoattgaggagotiggtcaacatoaco 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 5; Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 151.4; DB 5;
Pred. No. 8.5e-39;
0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: MACIOSOft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
Human Interleukin-13
                                                                                                                                                             APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                         FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN 1993
PRIOR APPLICATION DATA:
                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            436 AAGCAACTGTTTCGCCACGGCCCCTTC 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 aggggagtttatcgccatggaaatttc 327
                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                 SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 68.8%;
Matches 225; Conservative
                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY:
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
```

g

ò Q ò g ò g ò Q

ò

```
61 cagaatcaggcatcctctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 atgtactgcgcagctctagaatctctgatcaatgtctccgactgcagcgccatccaaagg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 acccagaggatgctgaaagcactgtgctctcaaaagcccgcgggaggatttccagtgaa 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142 AGATCTGTGTCTCTCCCTCTGACCCTTAAGGAGCTTATTGAGGAGCTGAGCAACATCACA 201
                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            1 agccctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                322 ACCCAGAGGATATTGCATGGCCTCTGTAACCGCAAGGCCCCCACTACGGTCTCCA----
                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                               Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                             Score 151.4; DB 5;
Pred. No. 8.5e-39;
0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 aggggagtttatcgccatggaaatttc 327 | 1 | 1 | 1 | 1 | 1 | 1 | 436 AAGCAACTGTTTGGCCACGGCCCTTC 462
                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ 1D NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1212 base pairs
                                                          UMBER: US 08/010977
29-JAN-1993
us 08/012543
                                                                                                                                                                                                                                                                                                                                             45.9%;
68.8%;
APPLICATION NUMBER: US 08
FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                           Query Match 45.9
Best Local Similarity 68.8
Matches 225; Conservative
                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: double
                                                        APPLICATION NUMBER:
FILING DATE: 29-JAN
                                                                                                                                                                                                                                                              ; TOPOLOGY: linear PCT-US93-07645-3
```

.. H

em\_esthum10:\*
em\_esthum11:\*
em\_esthum12:\*

em\_esthum13: em\_esthum14:

em\_esthum16: em\_esthum16: em\_esthum17: em\_esthum17: em\_esthum19: em\_esthum20: em\_esthum21: em\_esthum21: em\_esthum23: em\_esthum22: em\_esthum24: em\_esthum24: em\_esthum24: em\_esthum24: em\_esthum26: em\_esthum26:

em\_esthum27:\* em\_esthum28:\* em\_estin1:\*

em\_estin2:

em\_estin3: em\_estin4: em\_estin5: em\_estom1: em\_estom2: em\_estov1:

em\_estpl2: em\_estpl3:

em\_estp14

em\_estp.

em\_estpl1

```
993...
996...
1001...
102...
103...
103...
104...
105...
                                                                                                                                                                                  May 13, 2001, 11:40:52 ; Search time 5997.24 Seconds (without alignments) 480.707 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                  1, agccctgtgactccctcccc......atcgccatggaaatttcaga 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9623517 segs, 4368049070 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                           OM nucleic .- nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                       US-09-451-527-104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est1:*
gb_est2:*
gb_est2:*
gb_est5:*
gb_est6:*
gb_est6:*
gb_est6:*
gb_est10:*
gb_est11:*
gb_est11:*
gb_est11:*
gb_est11:*
gb_est12:*
gb_est13:*
gb_est21:*
gb_est21:*
gb_est21:*
gb_est23:*
gb_est36:*
gb_est3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_esthum6:*
em_esthum7:*
em_esthum8:*
em_esthum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_esthum3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_esthum2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_esthum5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST: *
                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                    Title:
```

em\_estp19:\* em\_estp110: em\_estro1:\*

em\_estro2 em\_estro3

em\_estpl6: em\_estpl7:

em\_estp18

em\_estrol3:\*
em\_estrol4:\*
em\_estrol6:\*
em\_estrol7:\*
em\_estrol7:\*
em\_estrol9:\*
em\_estrol9:\*

gb\_est26: gb\_est27: gb\_est28:

gb\_est25

9b\_est29: 9b\_est310: 9b\_est311: 9b\_est412: 9b\_est42: 9b\_est443: 9b\_est443: 9b\_est443: 9b\_est45: 9b\_est45:

em\_estro9:\*
em\_estro10:\*
em\_estro11:\*
em\_estro12:\*

em\_estro7:

em\_estro4: em\_estro5:

em\_estro6

|            |            |            |            |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            | •          |            |            | •          |            |           |            | ٠           |               |  |          |            | •          |            |            |            |            |             |             |             |           |                |             |             |             |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |              |               |               |               |               |  |                 |                 |                  |                   |               |               |               |               |                 |  |
|------------|------------|------------|------------|------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|-------------|---------------|--|----------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-----------|----------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|---------------|---------------|---------------|---------------|--|-----------------|-----------------|------------------|-------------------|---------------|---------------|---------------|---------------|-----------------|--|
| ob est48.* | gb_est49:* | gb_est50:* | gb_est51:* | gb_est52:* | 9D_ESC33: | gb_csc5:* | qb_est56:* | gb_est57:* | gb_est58:* | gb_est59:* | gb_est60:* | gb_est61:* | qb_est62:* | gb_est63:* | gb_est64:* | gb_est65:* | qb_est66:* | qb est75:* | qb_est76:* | qb_est77:* | qb_est78:* | ab est79:* | gb_(cc, 7. | gb_cscsc: | gh es+80.* | gh est 83:# | 45 est 84 : * | 95 - 63 - 64 - 64 - 64 - 64 - 64 - 64 - 64 | 95_estes | gb_esco: * | gb_est8/:* | gb_est88:* | gb_est89:* | gb_est90:* | gb_est99:* | gb_est100:* | qb_est101:* | gb est102:* | gb_cc.tcc | gh est 104 · * | gb_esc104:: | gb_est103:* | gb_est106:* | gb_est67:* | gb_est68:* | gb_est69:* | gb_est70:* | gb_est71:* | gb_est72:* | gb_est73:* | gb_est74:* | gb_est91:* | gb_est92:* | gb_est93:* | gb_est94:* | gb_est95:* | gb_est96:* | gb_est97:* | qb_est98:* | em_gss_fun:* | em_dss_huml:* | em dss hum2:* | em ass hum3:* | em ass hum4:* | ************************************** | on and bunder + | Cill_gas_nullo: | en gas innii : . | em_gss_numg:*     | ew_gss_hum9:* | em_gss_inv1:* | em_gss_inv2:* | em qss_inv3:* | em_dss_other: * |  |
| 7          | ۰ ۵۵       | 9          | . 02       | <b>⊣</b> ( | 4 6       | 4         | S          | 9          | 7          | α          | σ          | 0          | ч          | 2          | 3          | 4          | S          | 9          | ^          | æ          |            | Ċ          |            |           |            |             |               |  |          |            | <br>10 c   | <br>       | <br>2 :    | <br>::     |            | 33:         | . 4:        | 22          |           |                |             | <br>o c     | <br>ت       |            | : [        |            | 33:        | . 70       | 55:        |            |            |            | <br>6      |            | ::         |            | ٠.<br>ص    |            | <br>S:     | . 9          | .7            | <br>œ         |               |               |  |                 |                 | 2 5              | <br><del></del> ! | <br>د د       |               |               |               |                 |  |

| The property of the property o |
|--|
| 1990: em_gass.  1991: em_gass.  1992: em_gass.  1993: em_gass.  1994: em_gass.  1995: em_gass.  2000: em_gass. |
|  |

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Description                   | AZ261971 RPCI-23-1 | AZ027551 RPCI-23-3 | BE593226 WS1_99_B0 | BE357229 DG1_147_B | BG260311 602371427 | BF039993 BP250023B | BE705147 Sc02_08f0 | BE032541 131940 MA | BE032543 131942 MA | AI746678 ul06b05.y | AZ201624 SP_0053_A | AF034173 AF034173 | BE363650 WS1_64_G1 | BE361027 DG1_69_A0 | BE127683 DEPA1432 | BF606532 273595 MA | BE402120 CSB004F06 | BE414190 SCU007.C0 |  |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--|
| DB ID                         | 218 AZ261971       | 215 AZ027551       |                    | 166 BE357229       | 174 BG260311       | 143 BF039993       | 138 BE705147       |                    |                    | 24 AI746678        |                    |                   |                    | 166 BE361027       |                   | 150 BF606532       | 166 BE402120       | 166 BE414190       |  |
| *<br>Query<br>Match Length DB | 11.8 477           |                    |                    | 11.0 537           |                    |                    |                    |                    |                    |                    |                    |                   |                    |                    |                   |                    |                    |                    |  |
| Score                         | 39                 | 39                 | 36.4               | 36.4               | 35.2               | 34.4               | 34.4               | 34.2               | 34.2               | 34.2               | 34.2               | 34.2              | 34                 | 34                 | 33.8              | 33.8               | 33.6               | 33.6               |  |
| Result<br>No.                 | П                  | 7                  | m                  | 4                  | c<br>5             | 9                  | 7                  | <b>&amp;</b>       | თ                  | 10                 | c 11               | 12                | 13                 | 14                 | 15                | 16                 | 17                 | 18                 |  |

; 0

C

U

U

```
/note="Organ: Kidney/Brain; Vector: pBACe3.6; Site_1:
ECORI; Site_2: ECORI; Female C57BL/6J mouse kidney and/or
brain genomic DNA was isolated and partially digested
with a combination of ECORI and ECORI Methylase. Size
selected DNA was cloned into the pBACe3.6 vector at the
ECORI sites. The ligation products were transformed into
DH10B electrocompetent cells (BRL Life Technologies).

121 c 113 g 114 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AZ027551 521 bp DNA GSS 25-FEB-2000
RPCI-23-343M24.TJ RPCI-23 Mus musculus genomic clone RPCI-23-343M24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zhao,S., Nierman,W., Feldblyum,T., Malek,J., Shatsman,S., Akinret
,B., Levins,M., Mcgann,S., Tsegaye,G., Geer,K., Krol,M., de Jong,P.
and Fraser,C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: Szhaoétigr.org
Clones are derived from the mouse BAC library RPCI-23. For BAC
Library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://wbcpac.med.buffalo.edu/orderingframe.htm)
or from Resea ch Genetics (info@resgen.com). BAC end page:
http://www.tigr.org/tdb/bac_ends/mouse/bac_end_intro.html
Plate: 343 row: M column: 24
Seq primer: SP6
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata; Craniata; Vertebrata; Euteleostomi;
Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                       133 ATGGCAGCTGGAGCGTACTGGGATAGACAGTGGGACAACTGGAGAACACTGTGGTCACAAA 392
                                                                                                                                                                                                                                                                                                                   tgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatg 154
                                                                                                                                                                                                                                                                                                                                                                                     155 tetecegaetgeagegecatecaaaggaeceagaggatgetgaaageaetgtgeteteaaa 214
                                                                                                                                                                                                                                                                                                                                                 273 TGGCTAGCTTCAGTCACATGGTCAGACTGGACTGAGGTGATTGGATCATTCTGAATAAAT 332
                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                             ch 11.8%; Score 39; DB 218; Length 477; Similarity 52.1%; Pred. No. 0.66; 87; Conservative 0; Mismatches 80; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
712 Medical Center Dr., Rockville, MD 20850, USA
713: 301 838 0208
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agcccgcggcagggatttccagtgaacgcagccgagacaccaaaatt 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse BAC End Sequences from Library RPCI-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="RPCI-23-343M24"
/clone_lib="RPCI-23"
/sex="Female"
   /clone_lib="RPCI-23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                     /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ027551.1 GI:7102935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 521)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     house mouse.
                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                         215
                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
AZ027551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 (bassa 1 to 477)

L (bassa 1 to 477)

Shao, S., Nierman, W., Feldblyum, T., Malek, J., Shatsman, S., Akinret, B., Levins, M., Mcgann, S., Tsegaye, G., Geer, K., Krol, M., de Jong, P., and Fraser, C.M.

Mouse BAC End Sequences from Library RPCI-23

Unpublished (1999)

Other_GSS: RPCI-23-123P23.TJ

Contact: Shaying Zhao

Department of Eukaryotic Genomics

The Institute for Genomic Research

9712 Medical Center Dr., Rockville, MD 20850, USA

Tel: 301 838 0200

Fax: 301 838 0200
                                                                                                                                                                                                      BE312933 60189591
AL249964 Tetraodon
AA360834 EST70082
M80370 zh50f02.s1
AU129052 AU129052
AW862698 945006006
AW927591 945006006
AU162975 AU162975
AU168702 mgae00033d
BF685554 602140603
                A1909438 IL-BT208-
AA880435 vw89f07.r
AW318852 un08d12.y
AW475303 un64b04.y
                                                                                                                                                                                                                                                                                                                                                                                                  BE380347 601270411
AW786287 119229 MA
BE907816 601501924
BE441993 925010B01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A2261971 477 bp DNA GSS 26-JUL-2000
RPCI-23-123P23.TV RPCI-23 Mus musculus genomic clone RPCI-23-123P23
, DNA sequence.
A2261971
                                                                                    BF143984 601791238
BE228410 98AS2556
AI062250 GH01393.5
                                                                                                                                      C97983 C97983 Rice
AIO64071 GH04331.5
                                                                                                                                                                        AU092344 AU092344
BE871785 601448347
 BE216356 HV_CED001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: szhaoétigr.org
Clones are derived from the mouse BAC library RPCI-23. For BAC
Library availability, please contact Pieter de Jong
(pieterédejong.med.buffalo.cdu). Clones may be purchased from
BACPAC Resources (http://wacpac.med.buffalo.edu/orderingframe.htm)
or from Resea ch Genetics (info@resgen.com). BAC end page:
http://www.tigr.org/tdb/Dac_ends/mouse/bac_end_intro.html
Plate: 123 row: P column: 23
Seg primer: T7
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="RPCI-23:123P23"
                                                                                                                                                                                                                                                                                                                               AW927591
AU162975
AI068702
BF685554
                                                                                                                                                                                                                                                                                                                                                                                                  BE380347
AW786287
BE907816
BE441993
                                                                  AW475303
BF143984
                                                                                                       BE228410
AI062250
                                                                                                                                                                        AU092344
BE871785
BF312933
CNS03LV7
                                                                                                                                                                                                                                                                                              AU129052
                                                                                                                                                                                                                                                                                                                 AW862698
                                                                                                                                                                                                                                          AA360834
AA361196
W80370
                                                                                                                                                       AI064071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                              121
1107
1151
1151
1120
1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZ261971.1 GI:9470858
                                                                                                                                                                                                                                                                               158
                                                                                                                                                                      house mouse.
Mus musculus
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
AZ261971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
```

```
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE357229
BE357229.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                BE357229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                 δy
                                                                                                                                                    g
                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
           /note="Organ: Kidney/Brain; Vector: pBACe3.6; Site_1:
CooR: Site_2: EcoRI; Female C57BL/6J mouse kidney and/or
brain genomic DNA was isolated and partially digested
with a combination of EcoRI and EcoRI Methylase. Size
selected DNA was cloned into the pBACe3.6 vector at the
EcoRI sites. The ligation products were transformed into
DH10B electrocompetent cells (BRL Life Technologies).

136 c 124 g 124 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Sorghum bicolor"
/db_xref="taxon:458"
/clone_lib="water-stressed 1 (WS1)"
/clone_lib="water-stressed 1 (WS1)"
/clone_lib="water stressed 1 (WS1)"
/clone_lib="water was withheld; Vector: Lambda Zap; Site_1: XhoI;
Site_2: ECORI; The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were prepared by mass excision."

a 81 c 78 g 71 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnollophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

| Andropogoneae; Sorghum. | Andropogoneae; Sorghum. |
                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
Fax: 706 542 1805
Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-AUG-2000
bicolor cDNA,
                                                                                                                                                                                                                                                                                                                            tgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatctctgatcaatg 154
                                                                                                                                                                                                                                                                                                                                                                              tctccgactgcagcgccatccaaaggacccagaggatgctgaaagcactgtgctctcaaa 214
                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                        11.8%; Score 39; DB 215; Length 521;
Larity 52.1%; Pred. No. 0.67;
Conservative 0; Mismatches 80; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     An EST database from Sorghum: water-stressed plants upublished (2000)
Contact: Cordonier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WS11.99_B03.g1_A002 Water-stressed 1 (WS1) Sorghum ) BES93226 BES93226.1 GI:9848700
                                                                                                                                                                                                                                                                                                                                                                                                                                                      215 agcccgcgggaggatttccagtgaacgcagccgagacaccaaaatt 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          397 AGCTAGCAGTCTGTCTTGCCTGAGATGGCAGTCTGCATATCCTGATT 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 5
High quality sequence stop: 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: PolyTMix
                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POLYA-NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47
                                                                                                                                                                                                                                                             87;
                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                  95
                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE593226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                       pp
                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                 pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
Eukaryotta; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropognomae; Sorghum.

I (bases 1 to 537)
Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:4558"
/clone_lib="bark Grown 1 (DG1)"
/clone="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_l: XhoI; Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE357229 537 bp mRNA EST 20-JUL-2000 DG1_147_B02.g1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA sequence.
                                                                                                                                                                                                           84 eggeageatggtgtggagegteaacetgacegeeggeatgtactgegeagetetagaate 143
                                                                                                                                                                                                                                                           82 CGACGCCGCCGAGTGGGTCAACGGCCAGGTCATCCGCGCCCAACGGCGGCTACGTGTGATG 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84 cggcagcatggtgggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatc 143
                                                        Gaps
                                                                                                        24 cetcaaggageteattgaggagetggtcaacateacecagaateaggeateeetetgcaa 83
                                                                                                                                                        22 CCCCATGGAGAGCTCGGGGAGCCCGGCGACATCGCGCCGGTGGTGGTCGTCCTCTGCAC 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2502, Athens, GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24 cctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatcctctgcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                     ö
     Length 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An EST database from Sorghum: dark-grown seedlings
                                                  66; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 36.4; DB 166;
Pred. No. 3.9;
     DB 137;
Score 36.4; DB
Pred. No. 3.3;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: PolyTMix
High quality sequence start: 31
High quality sequence stop: 514
PoLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mmpratf@uga.edu
Sequences have been trimmed to
below Phred quality 16. The thr
is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽.
₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The University of Georgia Plant Sciences Building, FTel: 706 542 1860 Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                 144 tctgatcaatgtctccgactgc 165
                                                                                                                                                                                                                                                                                                                                            142 TCTGATCTTTAGCTTCTACAGC 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:9298786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.0%;
ilarity 53.5%;
Conservative (
Query Match
Best Local Similarity 53.5%;
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorghum bicolor
```

```
61801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                     9
                                                          LOCUS
                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                ACCESSION
                     RESULT
BF039993
                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="transitional cell papilloma, cell line"
/tissue_type="transitional cell papilloma, cell line"
/hote="Corgan: bladder; Vector: pcMv-SpORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full:length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
                                                                                                                                                                                      BG260311 757 bp mRNA EST 13-FEB-2001 602371427F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4479367 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tissue Procurement: ATCC CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.lln.gov
Plate: LLAM10311 row: f column: 08
High quality sequence stop: 736.
1 (bases 1 to , , , , , )
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137 tagaatetetgateaatgteteegaetgeagegeeateeaaaggaeeeagaggatgetga 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    688 recanaccercardadreceasescecescentrareceasasescecanciantes 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           197 aagcactgigcicicaaaagcccgcgggcaggatticcagigaacgcagccgagacacca 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aaattgaagtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttatcgcc 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                       Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 757)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10.7%; Score 35.2; DB 174; Length 757; 49.0%; Pred. No. 9.5; ive 0; Mismatches 98; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="NIH_MGC_93"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:9606"
/clone="IMAGE:4479367"
                                                    144 tctgatcaatgtctccgactgc 165
|||||||| | | | | | | | 369 TCTGATCTTTAGCTTCTACAGC 390
                                                                                                                                                                                                                                                              BG260311.1 GI:12770127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                           mRNA sequence.
BG260311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               317 atggaaatttca 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGAAACTTGA 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best_Local Similarity
Matches 94; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  186 a
                                                                                                                                                                                                                                                                                                       human.
                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Source
                                                                                                                                                                     BG260311/c
                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257
                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                      ò
                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
```

```
Fax: 217 244 5617

Email: h-lawineuluc.edu

Faxearch Initiative, Animal Genome Resource Grant AG 99-3205-8534

To H. A. Lewin and J. E. Womack. Base Calling/Quality Scores: PHRED from Washington University Genome Center. Vector Trimmi 9:

Cross_match from Washington University Genome Center. PRAPA suite.

This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 462)
Lewin, H.A., Soares, M.B., Rebeiz, M., Pardinas, J., Liu, L. and Larson
                                                                                                                                                                                                        Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
Contact: Lewin, H. A.
W. M. Keck Center for Comparative and Functional Genomics
University of Illinois at Urbana-Champaign
340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana, IL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Organ: placenta; Vector: pT7T3Pac; Site_1: EcoRI; Site_2: Not1; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. " 3 others
mRNA EST 10-OCT-2000 normalized bovine placenta Bos taurus CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85 ggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctagaatct 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173 TCCACCTGCGCCCAACAACATCAACCACAACAGGAGCTGCTGCCCCATCGAGCTGGACACC 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25 ctcaaggagctcattgaggagctggtcaacatcacccagaatcaggcatccttctgcaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="BP250023B10D12"
/clone_lib="Soares normalized bovine placenta"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145 ctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaa 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10.4%; Score 34.4; DB 143;
49.7%; Pred. No. 14;
Live 0; Mismatches 87;
                        BP250023B10D12 Soares normalized bovine clone BP250023B10D12 5', mRNA sequence. BF039993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BACKWARD: ATTAACCCTCACTAAAG
Insert Length: 462 Std Error: 0.00
Plate: BP250023B10 row: D column: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: AGCGGATAACAATTTCACACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 462 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /lab_host="DH10B"
                                                                                                                BF039993.1 GI:10757048
                                                                                                                                                                                                                                                                                            Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                   Bovine ESTs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
```

VERSION KEYWORDS SOURCE ORGANISM

TITLE JOURNAL COMMENT

REFERENCE AUTHORS

DEFINITION

ACCESSION

RESULT BE705147 LOCUS

```
Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18 and 'minmatch 12 options.

PCR PRIMERS
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="pooled"
/lab_host="DH10B"
/note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI;
Library made from pooled tissue from day 11, 13, 15, 20,
and 30 embryos." 95 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
1 (bases 1 to 546)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Design and use of two pooled tissue normalized cDNA libraries for
                  Design and use of two pooled tissue normalized cDNA libraries for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                227 CCTGTGACCACGCTCTACGATGACAAGGCAATGAGAAGAGCATCACCGTGGCCCAG 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 aatcaggcatccctctgcaacggcagcatggtgggagcgtcaacctgaccgccggcat 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             287 GATGAGGCATCCGCCCCAACACCACGTGGAGGCCTGGCCAACTGAACTGAAGCTGCCTT 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 cctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE032543 546 bp mRNA EST 0
131942 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BE032543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TTE1: 402 762 4366
Fax: 402 762 4390
                                                                                                                          USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TTE1: 402 762 4390
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 34.2; D
Pred. No. 17;
0; Mismatches
                                                                                                                                                                                                                            Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Sus scrofa"
/db_xref="taxon:9823"
/clone_lib="MARC lPIG"
                                                                                                                                                                                                                                                                                                                                                                                BACKWARD: GTTTCCCAGTCACGACG
Plate: 63 row: E column: 8
Seq primer: ATTTAGGTGACATARG.
Location/Qualifiers
                                             EST discovery in swine Unpublished (2000) Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST discovery in swine
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE032543.1 GI:8327552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 55.5%
Labor 66, Conservative
and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
BE032543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                   Singh, J.A., Piche, C., Couroux, P., De Moors, A., Harris, L.J., Hattori, J.J., Ouellet, T., Robert, L.S., Sprott, D. and Tinker, N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /dev_stage="seedling three-leaf stage"
/note="Vector: Bluescript SK+/XhoI-EcoRI; Site_1: Eco RI;
Site_2: Xho I; Sampled three-leaf seedlings treated for
none week at 2oC, 12 hrs light/day. Library made with
Stratagene UNIZAP XR Kit/(not packaged). CDNA is directly
ligated into SK+/XhoI-EcoRI, then electroporated into
TOP10 cells (Invitrogen)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
1 (bases 1 to 535)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E., Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                              Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cultivar="Puma (winter rye)"
/bxref="taxon:4550"
/clone="sC02.08f05"
/clone_lib="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seedl
                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Embryophyta, Tracheophyta, Spermatophy
Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae;
                                                                  BE705147 507 bp mRNA EST 12-SEP-2000 SC02_08f05_A SC02_AAFC_ECORC_cold_stressed_winter_rye_seedlings Secale cereale cDNA clone Sc02_08f05, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Singh,J.A.
Eastern Cereal and Oilseed Research Centre
Eastern Cereal and Agri-food Canada
Agriculture and Agri-food Canada
960 Carling Avenue, Bldg. 20, Ottawa, Ontario, KIA 0C6, Canada
Tel: (613) 759-1662
Fax: (613) 759-1701
Email: singhja@em.agr.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            165 ACGCCGTCCAGCACCRACAARARCCCCACCGAGGAGCAGCGAACAGCAACAACAACAC 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10 actocotococaaccotoaaggagotoattgaggagotggtcaacatcacccagaatcag 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE032541 535 bp mRNA EST 0
131940 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BE032541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225 GCGTCCGCCGACTCCGGCGACCAGTGGATGAAGAACATG 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70 gcatccctctgcaacggcagcatggtgtgggagcgtcaacctg 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 34.4; D
Pred. No. 15;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Secale cereale"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="leaf, crown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148 g
                                                                                                                                                                         BE705147.1 GI:10093412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:8327550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 55.9
Matches 57; Conservative
                                                                                                                                                                                                                                                         Secale cereale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE032541.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115
                                                                                                                                                                                                                                                                                                                                      Secale.
                                                                                                                                                                                                                                    rye.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pig.
```

source

FEATURES

BASE COUNT ORIGIN

ö

Gaps

; 0

09-JUL-2000

SOURCE ORGANISM

KEYWORDS

VERSION

REFERENCE AUTHORS

Ø

DEFINITION

BE032541

q

ò

Q

ð

LOCUS

ACCESSION

```
20402566
                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ201624/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A1746678 570 bp mRNA EST 22-JUN-1999 u106b05.yl Sugano mouse kidney mkia Mus musculus cDNA clone IMAGE:2065233 5' similar to gb:D00015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); gb:M13685 Mouse prion protein (MOUSE);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 570) Marra, M. Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., The Washu-NCI Mouse EST Project 1999 Unpublished (1999)
                                                                                                                                                        This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                               4 cctgtgactccctccccaaccctcaaggagctcattgaggagctggtcaacatcacccag 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Marra M/Washu-NCI Mouse EST Project 1999
Washington University School of Medicine
444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                           Length 546;
                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Sugano mouse kidney mkia"
/sex="female"
/dev_stage="adult"
/lab_nost="nfl.08"
                                                                                                                                                                                                                                                                                                                         DB 161;
                                                                                                                                                                                                                                                                                                                                                        53;
                                                                                                                                                                                                                                                                                                                       Score 34.2; DE
Pred. No. 17;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop: 283.
Location/Qualiflers
                                                                                    1. .546
/organism="Sus scrofa"
                                                                                                                    /db_xref="taxon:9823"
/clone_lib="MARC lPIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="IMAGE:2065233"
              BACKWARD: GTTTTCCCAGTCACGACG
Plate: 63 row: E column: 10
Seg primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: custom primer used
                                                                      Location/Qualifiers
FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C57BL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI746678.1 GI:5124942
                                                                                                                                                                                                                                                                                                                     ch
1 Similarity 55.5%;
66; Conservative C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          house mouse.
                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGI:994421
                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AI746678
                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
```

ò 엄 ò g

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strongylocentrotus purpuratus
Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinodea; Euchinodea; Echinodea; Echinodea;
Strongylocentrotidae; Strongylocentrotus.

1 (bases 1 to 965)
Cameron, R.A., Mahairas, G., Rast, J.P., Martinez, P., Biondi, T.R., Swartzell, S., Wallace, J.C., Poustka, A.J., Livingston, B.T., Wray, G.A., Ettensohn, C.A., Lehrach, H., Britten, R.J., Davidson, E.H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ201624 965 bp DNA GSS 31-AUG-2000 SP-003-AZ_BLZ-SPEE Strongylocentrotus purpuratus, purple sea urchin, sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=53 Col=24 Row=C, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 cagaatcaggcatccttctgcaacggcagcatggtgtggagcgtcaacctgaccgccggc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 AGGCCAGIGGATCAGTACAGCAACCAGAACTTCGIGCACGACTGCGTCAATAICACC 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         416 ATCAAGCAGCACGGTCACCACCACCACGAAGGGGGAGAACTTCACCGGAGATGTG 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 agocotgigacicocicoccaacocicaaggagoicatigaggagoiggicaacaicaco 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A sea urchin genome project: Sequence scan, virtual map, additional resources
Proc. Natl. Acad. Sci. U. S. A. 97 (17), 9514-9518 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                      Score 34.2; DB 24; Length 570;
Pred. No. 17;
0; Mismatches 64; Indels 0
                                                                                                                                                                                                                                                                                                                8 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Strongylocentrotus purpuratus"
/db_xref="taxon:7668"
/clone="Plate=53 Col=24 Row=C"
                                                                                                                                                                                                                                                                                                                                                                                                                                                    64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RA, Davidson, EH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            California Institute of Technology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Class: BAC ends
High quality sequence stop: 965.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pasadena California 91125, USA
Tel: (626) 395-8421
Fax: (626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strongylocentrotus purpuratus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: acameron@caltech.edu
Plate: 53 row: C column: 24
Seq primer: SP6
                                                                                                                                                                                                                                                                                                              190 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Division of Biology 156-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AZ201624.1 GI:8396538
                                                                                                                                                                                                                                                                                                                                                                                                         10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 atgtactgcgcagctc 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     476 AAGAATGATGNAGCGC 491
                                                                                                                                                                                                                                                                                                                                                                                                                              Best_Local Similarity 52.9
Matches 72; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Cameron,
                                                                                                                                                                                                                                                                                                                140 a
```

æ

qq

ò

pp õ g

ò

```
1593 SMSGCYGMTKRYYRYSWTGWTKWTTWWYMWSMTRWTMTYTTWWTWRTTKTWWWW 1647
                                                                                                                                                                                                   Sorghum bicolor
                                                                                                                                                 BE363650.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE361027
BE361027.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POLYA=Yes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sedneuce
                                                                                                                                                                                  sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                               DEFINITION
                                                                                                                                                                                                   ORGANISM
                                                  13
                                                                                                                                                                                                                                                                                                                                JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                  BE363650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE361027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                               TITLE
                                                  RESULT
                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
/clone_lib="Strongylocentrotus purpuratus, purple sea
urchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC Clones in B-Coli
                                                                                                                                                                 ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2275)
Tripodis, N. and Ragoussis, J.
Generation of a transcription map in the region immediately centromeric to human MHC across the 6p21.2-6p21.3 chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1473 AAAAAMWRYKRWKRRKGRRKRMTGMYKRMYRAMMAMCAMMACWWYYWKMRGMKKCWKYR 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1533 KYKKYTSTYYKSWSRWYWYTTYTWYCWCCTSMKSASCAMMRWMGYMGSRSSRSYWGYWG 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                              AF034173 2275 bp mRNA EST 30-MAR-1998 AF034173 Human mRNA (Tripodis and Ragoussis) Homo sapiens cDNA clone ntcon2 contig, mRNA sequence.
                                                                                                                                                                                                                            757 ATCTTTGAAGGGCACCACAGGGGAACCCGTGGTCAACACCCGGTACCAGTACTCGCCACT 698
                                                                                                                                                                                                                                                            caacggcagcatggtgtggagcgtcaacctgaccgccggcatgtactgcgcagctctaga 140
                                                                                                                                                                                                                                                                               138 agaatctctgatcaatgtctccgactgcagcgccatccaaaggacccagaggatgctgaa 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198 agcactgtgctctcaaaagcccgcgggaggatttccagtgaacgcagccgagacaccaa 257
                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                 80
                                                                                                                                                                                               aaccetcaaggagetcattgaggagetggtcaacatcacccagaatcaggcatecttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      //wier- vr.c...
/clone_micon2 contig"
/clone_lib="Human mRNA (Tripodis and Ragoussis)"
619 c 470 g 599 t 149 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258 aattgaagtgatccagttggtgaaaaacctgctcacctatgtaaggggagtttat 312
                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                DB 217; Length 965;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2275;
                                                                2 others
                                                                                                                                                               63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Guys Hospital
7th floor, Guy's Tower, London SE1 9RT, UK
Emall: nikos@nki.nl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Tripodis, Nikos
Division of Medical and Molecular Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 14;
                                                                                                                               Score 34.2; DB
Pred. No. 20;
0; Mismatches
                                                                297 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10.4%; Score 34.2; E
12.0%; Pred. No. 25;
:ive 88; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="6p21.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                   6
                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF034173
AF034173.1 GI:2707735
                                                                                                                               ch
1 Similarity 53.3%;
72; Conservative
                                                                178 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 12.0
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                141 atctctgatcaatgt 155
                                                                                                                                                                                                                                                                                                                                                             637 AGTACCTCTCAGGGT 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ::
::
                                                                  ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             438
                                                                304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                             Matches
                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                               AF034173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                              BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
```

g

à

Ωp

à

ò

```
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 370)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after-water was withheld; Vector: Lambda Zap; Site_1: Xho1; Site_2: EcRI; The library was made from poly-A RNA in the cloning vector lambda Zap II. Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sorghum.
Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                     Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE361027 562 bp mRNA EST 20-JUL-2000 DG1_69_A02.bl_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA
BE363650 370 bp mRNA EST 20-JUL-2000 WS1_64_G10.91_A002 Water-stressed 1 (WS1) Sorghum bicolor CDNA, BE363650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13 coetececaaceteaaggageteattgaggagetggteaacateaeceagaateaggea 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The University of Georgia

Blant Sciences Building, Rm. 2502, Athens, GA 30602-7271, Tel: 706 542 1806

Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73 tecetetgeaacggeageatggtgtggagegteaacetgaeeggeatgtae 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 370;
                                                                                                                                                                                                                                                                                                                                                                                                                                         An EST database from Sorghum: water-stressed plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.3%; Score 34; DB 166;
ilarity 56.1%; Pred. No. 18;
Conservative 0; Mismatches 50;

    .370
    /organism="Sorghum bicolor"
    /db_xref="taxon:4558"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 32
High quality sequence stop: 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                             GI:9305207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:9302584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seg primer: PolyTMix
```

```
Search completed: May 13, 2001, 11:40:59 Job time: 16534 sec
                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // State in the control of the contr
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                            . Andropogoneae; Sorghum.
1 (bases 1 to 562)
Cordonnier-Pratt,M.-M., Gingle,A., Marsala,C., Sudman,M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE127683 341 bp mRNA EST 15-JUN-2000
DEPA1432 Rat Lambda ZAP Express Library Rattus norvegicus CDNA 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Norway rat.
Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 341)
Sleeman, M.A., Murison, J.G., Strachan, L., Kumble, K.D., Glenn, M.P.,
McGrath, A., Grierson, A., Havukkala, I., Tan, P.L.J. and Watson, J.D.
Expressed sequence tags of cDNA clones from rat dermal papilla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          171 CCCTTCGCCGAGCTCAAGGACGTCAAGACGCCGCTGGACCAGTCCACGCAGAAGCACCGC 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13 coetececaaceeteaaggageteattgaggagetggteaacateaceegaateaggea 72
                                                                                                                                                                                                                                                                                                                                               The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10.3%; Score 34; DB 166; Length 562; 56.1%; Pred. No. 20; 1.ve 0; Mismatches 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Generals Research and Development Corporation Limited P.O. Box 50, 1 Fox St. Parnell, Auckland, New Zealand Tel: 0064 9 373 5600
Frax: 0064 9 373 2189
Frax: 0064 9 373 2189
Frax: 0664 9 375 2189
                                                                                                                                                                                             An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is 20.
Seq primer: JEN REV
High quality sequence stop: 560
POLYR=No.
                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE127683.1 GI:8550422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Sleeman MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 56.1:
Matches 64; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BE127683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                         TITLE
JOURNAL
COMMENT
                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE127683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
```

q

ô

g

ò

```
Gaps
                                                                                                                                                                                                                                                                                    1 agocottgtgactcoctcoccaaccotcaaggagctcattgaggagctggtcaacatcacc 60
                                                                                                                                                                                                                                                                                                                                                    61 cagaatcaggcatccttctgcaacggcagcatggtgtggagcgtcaacctgaccgccg 118
                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                     DB 163; Length 341;
                                            /organism="Rattus norvegicus"
/strain="Dark-Agouti"
/db_xref="taxon:10116"
/clone_lib="Rat Lambda ZAP Express Library"
/tissue_type="dermal papilla"
a 88 c 105 g 58 t 2 others
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                      53;
                                                                                                                                                                                                                  10.2%; Score 33.8; D
55.1%; Pred. No. 20;
11ve 0; Mismatches
High quality sequence stop: 3
                                                                                                                                                                                                                                                    65; Conservative
                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                   88
                                                                                                                                                                                                                   Query Match
                                   source
                                                                                                                                                                                                                                                    Matches
                                                                                                                                                   BASE COUNT
```

ö

Searched:

Sequence:

Run on:

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length DB
                                                                                                    em_vi:*
gb_sts1:*
gb_sts2:*
gb_sts3:*
                                                                                                                                                                                                                                                                                 gb_htg7:*
gb_htg8:*
gb_htg9:*
gb_htg10:
                                                                                                                                                    3b_sy:*
3b_un:*
3b_vi1:*
3b_vi2:*
3b_htg1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_pr8:*
gb_pr9:*
gb_ro1:*
gb_ro2:*
em_ov:*
em_pat:*
em_ph:*
em_pl:*
                                                 em_ro:*
em_sts:*
em_sy:*
                                                                                                                                                                                                                                                                                                                                                                       gb_htg14
                                                                                         em_un:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_pr6:
gb_pr7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_pr1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187.4
1187.4
1187.4
1185.8
1185.8
1185.8
1185.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
No
                                                                                    May 13, 2001, 14:25:22 ; Search time 9342.78 Seconds (without alignments) 520.915 Million cell updates/sec
                                                                                                                                                 330
1 tctgaaatttccatggcgat.....ggggagggagtcacagggct 330
                                                                                                                                                                                                                                                      2566470
             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                         1283235 seqs, 7373929652 residues
                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                             OM nucleic - nucleic search, using sw model
                                                                                                                                                                                      IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_htg_inv1:*
em_htg_inv2:*
em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
em_htg_hum1:*
                                                                                                                                      US-09-451-527-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hum6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_htg_hum8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_htg_hum5:
                                                                                                                                                                                                                                                                             seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hum2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htg_hum3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_htg_hum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_htg_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_hum5:*
em_hum6:*
em_hum7:*
em_in:*
em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                    gb_inl:*
gb_in2:*
gb_in3:*
gb_om:*
gb_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_p11:*
gb_p12:*
gb_p13:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_p14:*
em_ba1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_hum4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_pat2:
gb_ph:*.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                gb_ba1:*
gb_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_ba2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_hum2
                                                                                                                                                                                                                                                                                                                                                                                                          gb_ba3:
                                                                                                                                                                                                                                                                                                                                                                   GenEmbl:*
                                                                                                                                                                                       Scoring table:
                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                            Minimum DB :
Maximum DB :
                                                                                                                                                                                                                                                                                                                                                                   Database :
```

A29931 Sequence co I58494 Sequence 24 L06801 Homo sapien X6509 H. saplens i I34548 Sequence co I58481 Sequence 2 AF044334 Homo sapi A29948 Coding sequ I58488 Sequence 2

A29931 IS8494 HUMILL13A HSNC30 I34548 A29930 IS8481 A29948 A29948

10 93 10

9 9 10

AF244915 Canis fam

AF244915

Description

SUMMARIES

```
Best Local
                3'UTR
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                     178
                                                                                                                                61
                                                                                                                                                                                                                                                                                                                   RESULT A29931/c
                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                       qq
                                                                                                              g
                                                                                                                                ò
                                                                                                                                                                  Ω
                                                                                                                                                                                   g
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                  AJ13241 Bos tauru
AC074127 Homo sapi
L13028 Mouse inter
AC084392 Homo sapi
AC065742 Mus miscri
                                                                                                   AF27690 Canis fam
L42080 Homo sapien
L13029 Human inter
U10307 Human inter
AC004139 Homo sapi
AC074127 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="interleukin-13"
/protein_id="ARF63204.1"
/db_xref="GI:7528274"
/tb_xref="GI:7528274"
                                                                   I58495 Sequence 26
M23504 Mus musculu
                                                                                              L26913 Rattus Norv
                                                                                                                                                                                                             AC020886 Mus muscu
                                                                                                                                                                                                                               AL359215 Streptomy
M92377 Mus musculu
                                                                                                                                                                                                                                                                        AJ223310 Streptomy
U77894 Streptomyce
AF195788 Rattus no
                                                                                                                                                                                                                                                                 AB025632 Arabidops
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (13-MAR-2000) Allergy and Immunology, Heska Corporation,
1613 Prospect Parkway, Fort Collins, CO 80525, USA
Location/Qualifiers
                                                                                                                                                                                                                                             AL078618 Streptomy
AP000063 Aeropyrum
                AR027065 Sequence
I86198 Sequence 4
                                A52326 Sequence 1
AR027062 Sequence
I86195 Sequence 1
                                                          AF072807 Bos tauru
                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
1 (bases 1 to 1302)
A29950 Nucleic aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang, S., Boroughs, K.L. and McDermott, M.J.
Canine interleukin-13: molecular cloning of full-length cDNA and
Expression of biologically active recombinant protein
J. Interferon Cytokine Res. 20 (9), 779-785 (2000)
                                                                                     I34549 Sequence
                                                                                                                                                                                                                                                                                                                                                                16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                              AF244915 1302 bp mRNA MAM 10
Ganis familiaris interleukin-13 mRNA, complete cds.
AF244915.1 GI:7528273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    familiaris
                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                         AC074127
HUM11DC982
                                                                                                              HUM11DC992
             AR027065
0 186198
0 186198
AR027062
186195
AF072807
150495
MUSSICPE
                                                                                                                      HUMIL13B
HSU10307
                                                                                                                                        HSU31120
AC004039
                                                                                                                                                                                                                     AC020886
SC2H12
                                                                                              RATIL13A
                                                                                                                                                                                                                                                                                 SAU77894
AF195788
                                                                                                                                                                                                                                     MUSGABAT
                                                                                                                                                                                                                                                                 AB025632
                                                                                                     AF276990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9615"
                                                                                                                                                                                                                                                        AP000063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .1302
/organism="Canis
                 910
                                                                  010
40
87
80
80
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .447
                                                                           1207
                                                                                                                                                         78469
3395
                                                                                                                                                                                                    142732
                                                                                                                                                                                                                              38390
                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris
                                                                                                      213343
                                                                                                                                                                                                                                                       185300
                                                                                                     32.2
                                                                                                                                                                                                    00
                                                                           σσ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11032397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang, S.
               182.6
182.6
182.6
182.6
182.6
                                                                                                                                                                                  558.4
449.4
449.4
40.8
339
                                                                                                                                                                                                                                                      36.8
36.6
36.4
36.4
                                                                           151.4
151.4
140.8
106.4
                                                                   151.4
                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                     AF244915/C
                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
0000000000000
                                                                                                                        000
                                                                                                                                                                                                                                       000000
```

```
SLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSER
SRDTKIEVIQLVKNLLTYVRGVYRHGNFR"
                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Boutefiler, C., Leplatols, P., Magazin, M. and Minty, A. Protein having cytokin type activity, recombinant DNA coding for this protein, transformed cells and microorganisms
Patent: EP 0506574-A 3 30-SEP-1992;
ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325
                                                                                                                                                                                                                                                                    117
                                                                                                                                                                                                                                                                                                                                        118 ttgagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagac 177
                                                                                                                                                                                                                                                                                                                                                                                                                                              205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            334 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 275
                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gateactteaattttggtgtcteggetgegtteactggaaat---eeetgeeggggett
                                                                                                                                                                                                                                                                                     attgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                               1 totgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg
                                                                                                                                                                                                                                                                                                                                                                         324 TTGAGAGCACAGTGCTTTCAGCATCCTCTGGGTCCTTTGGATGGCGCTGCAGTCGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                               .
9
                                                                                                                                                            .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   асуузт 336 bp DNA PAT 23.
Sequence coding for the mature cytokine like protein.
A29931
                                                                                                                      Score 317; DB 7; Length 13
Pred. No. 1.1e-72;
0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 187.4; DB 9; Length
Pred. No. 9.3e-39;
0; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   artificial sequence.
1 (bases 1 to 336)
Caput,D., Ferrara,P., Guillemot,J.C., Kaghad,M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:32630"
95 c 90 g 71 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualiflers
1. .336
                                                        Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56.8%;
76.9%;
                                                                                                                          96.1%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A29931.1 GI:1249019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthetic construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthetic construct
                                                                                                                                                           Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 56.8
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ø
                                                    337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                          Query Match
```

120

180

ò

QQ ò g ò qq RESULT I58494/C

KEYWORDS

REFERENCE AUTHORS

```
/product="interleukin 13"
/protein_id="AAA36107.1"
/db_xref="01:186276"
/translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQK
APLCNSMWWSINLFAGMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSACQFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. (base) 1 to 1270)
McKenzie, A.N.J., Culpepper, J.A., de Waal Malefyt, R., Briere, F., Punnonen, J., Aversa, G., Sato, A., Dang, W., Cocks, B.G., Menon, S., de Vies, J.E., Banchereau, J. and Zurawski, G.R.
Interleukin-13, a T cell-derived cytokine that regulates human monocyte and B cell function
Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gagagcacagtgctttcagcatccttgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198 TGCTGCCATTGCAGAGCGGAGCCTTCTGGGTTCTGGGTGATGTTGACCAGCTCCTCAATGA 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 tgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota: Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhin; Hominidae; Homo.
1 (bases 1 to 1282)
                                     interleukin 13; regulatory protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---ctgattctgggtgatgttgaccagctcctcaatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGGCAGAATCCGCTCAGCATCCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 93; Length 1270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 187.4; DB 93;
Pred. No. 8.5e-39;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geteettgaaggttggggaagggagteacaggge 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            311
                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H. Sapiens interleukin-13 mRNA. X69079 SA69079.1 GI:207707
                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                Location/Qualifiers
                                                  Homo sapiens cDNA to mRNA.
Homo sapiens
                                     cytokine; growth factor;
                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56.8%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tgctgccgttgcagagggatgc-
                   GI:186275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 56.8
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lymphokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288 a
                     L06801.1
                                                                                                                                                                                                                                               93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_site
BASE COUNT
                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                               MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                   VERSION
KEYWORDS
                                                                                                                            REFERENCE
                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
 ACCESSION
                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSNC30/c
                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 336)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A!
Protein having interleukin 13 activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: US 5652123-A 24 29-JUL-1997;
                                                                                                                                          296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggcttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gagagcacagtgctttcagcatccttgggtccttttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
334 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      214 GCGGGCAGAATCCGCTCAGCATCCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                        94 TGCTGCCATTGCAGAGCGGAGCCTTCTGGTTCTGGGTGATGTTGACCAGCTCCTCAATGA 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94 TGCTGCCATTGCAGAGCGGAGCCTTCTGGTTCTGGGTGATGTTGACCAGCTCCTCAATGA 35
                                                                                                                                                                                                                                                                                                                                     07-0CT-1997
                                                                                                                                            tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga
                                                                       tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10; Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HUMIL13A 1270 bp mRNA PRI
Homo sapiens interleukin 13 mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 187.4; DB 10;
Pred. No. 9.3e-39;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ب
                                                                                                                                                                                                                gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.1
                                                                                                                                                                                                                                                                                                                                                       5652123
                                                                                                                                                                                                                                               7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ~
                                                                                                                                                                                                                                  Location/Qualifiers
1. .336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
95 c 90 g
                                                                                                                                                                                                                                                                                                                                                       as
                                                                                                                                                                                                                                                                                                                                              Sequence 24 from patent
IS8494
IS8494.1 GI:2477732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 56.8%;
Best Local Similarity 76.9%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                       336 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                     58494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HUMIL13A/C
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34
                                                                                                                                          240
                                                                                                                                                                                                              297
                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297
```

JOURNAL

TITLE

FEATURES

g ò Q ò q δ q ò 임 ò Db

2

9

17-FEB-1997

PRI

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                      RESULT (I34548/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                   Oy
Dp
                                                                            ò
                                                                                                         Ob
                                                                                                                                          ò
                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dp
                           Submitted (02-NOV-1992) A.J. Minty, Sanofi-Elf Bio Recherches, Labege Innopole, Voie 1, BP 137, 31676 Labege Cedex, FRANCE 2 (bases 1 to 1287 in 1287) Minty A.J., Chalon, P., Derocq, J.M., Dumont, X., Guillemot, J.C., Kaghad, M., Labit, C., Leplatois, P., Liauzun, P., Miloux, B., Minty, C., Casellas, P., Loison, G., Lupker, J., Shire, D., Ferrara, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MHPLLNPLLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTORMLSGFCPHKVSAGGFSSL
HVRDTKIEVAQFVKDLLLHLKKLFREGRFN"
                                                                                                                                     Interleukin-13 is a new human lymphokine regulating inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                   /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="alternative; ATG at 15 is an alternative start
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1282;
                                                                                                                                                                                                                                                          /chromosome="5q 23.31"
/cell_type="peripheral blood lymphocytes"
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 56.8%; Score 187.4; DB 92; Best Local Similarity 76.9%; Pred. No. 8.5e-39; Matches 256; Conservative 0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="SWISS-PROT: P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="NC30; alternative"
117, 452
                                                                                                                                                                                                                                                                                                                                                /product="NC30; alternative'
15. .455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="SWISS-PROT:P35225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=experimental
/protein_id="CAA48823.1"
/db_xref="G1:580330"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=experimental
/protein_id="CAA48824.1"
/db_xref="GI:673420"
                                                                                                                                                     and immune responses
Nature 362 (6417), 248-250 (1993)
93211479
                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=experimental
                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .134. .1138
note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note="ATTTA motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             373. .877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        337 g
                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                        /gene="NC30"
15. .116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153. .1157
/note="ATTTA
                                                                                                                                                                                                                                                                                                                                      /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                    /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57. .116
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117. .452
/gene="NC30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /replace="a"
356. .860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . . . 1269
341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dene="NC30"
Minty, A.J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_signal
BASE COUNT 293 a
ORIGIN
                                                                                                                       Caput, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                           sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variation
AUTHORS
TITLE
                              JOURNAL
                                                            REFERENCE
                                                                            AUTHORS
                                                                                                                                                                                     MEDILINE
                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                  FEATURES
                                                                                                                                       TITLE
```

```
239
                                                                                              331
                                                                                                                                                                271
                                                                                                                                                                                                                                211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        239
               240 tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                  318 GCGGCAGAATCCGCTCAGCATCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                 390 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT
                                                                                                                            3 tgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactgga
                                                              teactteaattttggtgtcteggetgegtteactggaaa---teectgeegegggetttt
                                                                                                                                                                                             180 tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga
tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgatcagagattctagagctgcggtacatgccggcggtcaggttgacgctccacacac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8.5e-39;
has 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 1290)
Culpopper,J., McKenzie,A., Dang,W. and Zurawski,G.
Method of refolding human IL-13
Patent: US 5596072-A 1 21-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 187.4; E
Pred. No. 8.5e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ų,
                                                                                                                                                                                                                                                                                                                                297 gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                     GCTCCCTGAGGGCTGTAGAGGGAGGCACAGGGC 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gctccttgagggttggggaggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="unknown"
335 c 336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                               134548 1290 bp DNA
Sequence 1 from patent US 55
134548
134548.1 GI:1825339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 56.8
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297
```

.. 7

; ;

Gaps

9

Indels

S

; ;

Gaps

. 9

275 119 215 179

62

239

source

FEATURES

JOURNAL

TITLE

BASE COUNT ORIGIN

95

296

DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM

A29930/c

RESULT

g

REFERENCE AUTHORS

```
/note="second PCR"
/PCR_conditions="94C-lmin, 50C-lmin, 72C-3min, 30 cycles;
4...402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
Subaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 417)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF043334 417 bp mRNA PRI 21-FEB-1998 Homo sapiens interleukin 13 precursor (IL13) mRNA, complete cds. AF043334.1 GI:2905619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (15-JAN-1998) Protein Engineering, General Institute Technology, Hyundai Pharm. Ind. Co., Ltd., 213 Sosa Bon 1-dong, Sosa-gu, Bucheon 422-231, Korea
                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:9606"
/cell_type="PHA-treated peripheral blood leukocyte"
1. .417
/gene="IL13"
                                                                                                                                                                                                                                                                                                  gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat
                                                                                                                                                                          tgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                           tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt
                                                                                                                                                                                                                                                                    274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGGAGACCTTGT
                                                                                                                                                                                                                                                                                                                                                               tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga
                                                                                                             Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 forward primer (5'-ctcaatcctcctgttggca-3')
reverse primer (5'-tagtcaggtcctgtctctgc-3')
2) second PCR:
forward primer (5'-ctcatggcgcttttgttgaccacg-3')
reverse primer (5'-gaegctttcgaagtttcagttgaa-3').
Location/Qualifiers
                                                                                                              DB 10;
                                                                                                           Score 185.8; DB 10;
Pred. No. 2.4e-38;
0; Mismatches 72;
                                                 u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gctccttgagggttggggaggagtcacagggc 329
                                                7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
   Location/Qualifiers
                                /organism⇔"unknown"
                                                 g
                                                89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jang, J.S. and Kim, B.E. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .24
/gene="IL13"
                                                                                                             56.3%;
76.6%;
                                                υ
                                                                                                                                           Conservative
                                                95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1) first PCR
                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sosa-gu, Bu
Nested PCR:
                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      primer_bind
                                                                                                                                           255;
                                                                                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
AF043334/c
                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                COUNT
                                                                                                                                           Matches
                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                ORIGIN
                                                BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                       a
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases I to 336)
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 2 29-JUL-1997;
                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 tgaaatttccatggggataaactcccttacataggtgagcaggtttttcaccaactgga 62
                                                                              23-JUN-1995
                                                                                                                                                                                                                Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Boutciller, C., Leplatois, P., Magazin, M. and Minty, A.
Proterin having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 2 30-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-0CT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 336;
                                                                              Sequence coding for the mature cytokine like protein A29930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                      56.3%; Score 185.8; DB 9;
.larity 76.6%; Pred. No. 2.4e-38;
Conservative 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                               construct"
                                                                                                                                                                                                                                                                                                                                                                          ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138 GCTCCCTGAGGGCTGTAGAGGGAGGCACAGGGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2 from patent US 5652123.
158481
158481. GI:24771

    .336
    /organism="synthetic cc/db_xref="taxon:32630"

                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                             ф
                                                                                                                          A29930.1 GI:1249018
                                                                                                                                                                                     artificial sequence.
                                                                                                                                                      synthetic construct
synthetic construct
                                                                                                                                                                                                   (bases 1 to 336)
                                                                                                                                                                                                                                                                                                                                                                          95 c
                                                                             336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    al Similarity
255; Conserv
                                                                                                                                                                                                                                                                                             SANOF
                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                                                               ELF
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 255
```

οĮ

DEFINITION

RESULT ( IS8481/c LOCUS

180 154 240 297 34

63

qq ò g ò QQ ò a ò g ò q ACCESSION VERSION

ORGANISM

KEYWORDS SOURCE

REFERENCE

AUTHORS

TITLE

JOURNAL

```
Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158488.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                               150
                                                                                                                                                                            63
                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
158488/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                          BASE
                                                                                                                                                      pp
                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                 à
                                                                                                                                                                            ò
                                                                                                                                                                                               g
                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                       /translation="MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITONOK
APLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSL
HVRDTKIEVAQFVKDLLLHIKKLFREGRFN"
                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                  338
                                                                                                                                                                                                                                                                                       tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcggggtttt 119
                                                                                                                                                                                                                                                                                                             278
                                                                                                                                                                                                                                                                                                                                  gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                                                                                                                                                239
                                                                                                                                                                                                                                                                                                                                                                                                   TGATCAGGGATTCCAGGGCTGCACAGTACATGCCAGCTGTCAGGTTGATGCTCCAAACCA 158
                                                                                                                                                                                                                                                                                                                                                                                                                           296
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthetic construct.
synthetic construct
artificial sequence.
1 (bases 1 to 1297)
Caput.D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 21 30-SEP-1992;
                                                                                                                                                                                                                                            tgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                                                                                         337 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT
                                                                                                                                                                                                                       .
9
                                                                                                                                                                                                Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cytokine like activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="protein with cytokine like activity"
                                                                                                                                                                                                                       Indels
         precursor"
                                                                                                                                                                                                 88;
                                                                                                                                                                                               Score 185.8; DB 88;
Pred. No. 2.4e-38;
); Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          construct"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gctccttgagggttggggggggggtcacagggc 329
                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13"
        /product="interleukin 13
/protein_id="AAC03535.1"
/db_xref="G1:2905620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein with
                                                                                                                   /product="interleukin
complement(394. 417)
/note="second PCR"
121 c 108 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .1297
/organism="synthetic c/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                     .;
0
/codon_start=1
                                                                       /gene="IL13"
64. 300
                                                                                                                                                                                                56.38;
                                                                                                       /gene="IL13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1297 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:1249028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Coding sequence for A29948
                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                          Best Local Similarity
Matches 255; Conserv
                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A29948.1
                                                                                                                                                      91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A29948
                                                                         sig_peptide
                                                                                               mat_peptide
                                                                                                                               primer_bind
                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sonrce
                                                                                                                                                      COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                            ო
                                                                                                                                                                                                                                                                 397
                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
A29948/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rocus
                                                                                                                                                      BASE
                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                        ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
```

```
/protein_id="CAA01982.1"
/db_xref="GI:1249029".
/db_xref="GI:1249029".
/translation="MMPLLNPLLALGLMALLLTTVIALTCLGGFASPGPVPPSTALR
ELIEBEVNITYONGNAPLCNGSNVWSINLTADMYCAALESLINVSGCSAIEKTQRMLSG
FCPHKYSAGQPSSTHVBJKIEVAQPYKDLLLHLKKLFREGRFN"
341 c 336 9 311 t
                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                  179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                                                                            331
                                                                                                                                                                                                                                                                                                                                                                                                                                                        271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  211
                                                                                                                                                                                                                                                                                      210 TGCTGCCATTGCAGAGCGGAGCCTTCTGGTTCTGGGTGATGTTGACCAGCTCCTCAATGA 151
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450 TGAACCGTCCCTGGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 391
                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                  gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            teacticaattitiggigicicggetgegiteaciggaaa---teecigeegggetitt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                                                                                            3 tgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                                                                                                                                                                                                          390 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        330 GCGGGCAGAATCCGCTCAGCATCCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240 tgctgccgttgcagaggatgc...ctgattctgggtgatgttgaccagctcctcaatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 1297)
Caput, D., Ferrara, P., Guillemot, J., Kaghad, M., Labit-Le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having interleukin 13 activity, recombinant DNA
this protein, transformed cells and microorganisms
Patent: US 5652123-A 15 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                      9
                                                                                                                                                                                Length 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 185.8; DB 10; Length
Pred. No. 2.2e-38;
0; Mismatches 72; Indels
                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT
                                                                                                                                                                                6
                                                                                                                                                                                                                    72;
                                                                                                                                                                              Score 185.8; DB 9
Pred. No. 2.2e-38;
0; Mismatches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 15 from patent US8488
                                                                                                                                                                              Query Match 56.3%;
Best Local Similarity 76.6%;
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 56.3%;
Best Local Similarity 76.6%;
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:2477726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1297
```

07-0CT-1997

120

q ò Q ò g ò q

180

```
Unclassified.

1 (bases 1 to 425)
Legoux,R., Maldonado,P. and Salome,M.
Method for the extraction of periplasmic proteins from prokaryotic microorganisms in the presence of arginine patent: US 5856142-A 4 05-JAN-1999;
                                                                                                           Unclassified.

1 (bases 1 to 384).
Caput,D., Ferrara,P., Guillemot,J., Kaghad,M., Labit-Le
Bouteiller,C., Leplatois,P., Magazin,M. and Minty,A.
Protein having interleukin 13 activity, recombinant DNA coding for
this protein, transformed cells and microorganisms
Patent: US 5652123-A 17 29-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                    3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175 TGATCAGGGATTCCAGGGCTGCACAGTACATGTCAGCTGTCAGGTTGATGCTCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     115 TGCTGCCATTGCAGAGGGGGGCCTTCTGGTTCTGGGTGATGTTGACCAGCTCCTCAATGA
                                                                                                                                                                                                                                                                                                                                     Score 184.2; DB 10;
Pred. No. 6.3e-38;
0; Mismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 182.6;
                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
                   5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425 bp DNA
4 from patent US 5856142.
                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                       /organism="unknown"
104 c 99 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
116 c 110 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
   DNA
US
              Sequence 17 from patent
158489
158489.1 GI:2477727
                                                                                                                                                                                                                                                                                                                                     55.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4 from patent
AR027065
AR027065.1 GI:5937905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.3%;
   384 bp
                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ದ
                                                                                                                                                                                                                                                                          ¢
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AR027065
                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown
   I58489
                                                                                                                                                                                                                                                                                                                                                                  254;
                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AR027065/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                   DEFINITION
                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55
                                ACCESSION
                                                                                                                              REFERENCE
                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                          TITLE
                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135 GCGGCAGAATCCGCTCAGCATCCTCTGGATCTTCTCGATGGCACTGCAGCCTGACACGT 176
                                                                                                                                             210 TGCTGCCATTGCAGAGCGGAGCCTTCTGGTTCTGGTGTTGACCAGCTCCTCAATGA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggcttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26
                                                                                                                                                                                                                                                                                                      23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                           artificial sequence.

1 (bases 1 to 384)
Caput, D., Ferrara, P., Guillemot, J.C., Kaghad, M., Labit-le
Bouteiller, C., Leplatois, P., Magazin, M. and Minty, A.
Protein having cytokin type activity, recombinant DNA coding
this protein, transformed cells and microorganisms
Patent: EP 0506574-A 23 30-SEP-1992;
ELF SANOFI
295 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga
                                                               tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.8%; Score 184.2; DB 9; Length 384; llarity 76.3%; Pred. No. 6.3e-38; Conservative 0; Mismatches 73; Indels 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                      PAT

    .384
    /organism="synthetic construct"
/db_xref="taxon:32630"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       u
                                                                                                                                                                                                         150 GCTCCCTGAGGGCTGTAGAGGGGAGGCACAGGGC 118
                                                                                                                                                                                         gotoottgagggttgggggaggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCCCTGAGGGCCGTAGAGGGAGGCACAGGGC 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                            Nucleic acid fragment B. A29950
                                                                                                                                                                                                                                                                                                      384 bp
                                                                                                                                                                                                                                                                                                                                                A29950.1 GI:1249030
                                                                                                                                                                                                                                                                                                                                                                                 synthetic construct. synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
158489/c
                             330
                                                                                                                           240
                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
```

116 239

56

PAT

63

q ò g ò a ò g ò g ò qq

55 297

9. DB

ä

Gaps

. 6

DB 10; Length 384;

ACCESSION VERSION

A29950/c

KEYWORDS SOURCE

REFERENCE AUTHORS JOURNAL

TITLE

FEATURES

Oy 297 gctccttgagggttggggagggagtcacagggc 329
Db 97 GCTCCCTGAGGCCAGTACTGGGAGGCACAGGGC 65

Search completed: May 13, 2001, 14:25:24 Job time: 19404 sec

low adenosin

OM nucleic

Run on:

```
Canine interleukin
Canine interleukin
Glydl-Cytokine cod
Human low adenosin
Human adenosine re
                                                                    Human adenosine re
                                                                                        Human low adenosin
Human adenosine re
                                                                                                           Human low adenosin
Human adenosine re
                                                                                                                               Asp41-Cytokine cod
Cytokine NC30. Q
Sequence encoding
                                                                                                                                                           Human low adenosin
Human low adenosin
                                                                                                                                                                               Human adenosine re
Human adenosine re
                                                                                                                                                                                                  Canine interleukin
                                                                                                                                                                                                                                                            Enhanced green flu
Enhanced blue fluo
Enhanced cyan fluo
                                                                                                                                                                                                             Zea mays DNA fragm
                                                                                                                                                                                                                     coelicolor YesW
                                                                                                                                                                                                                                                                                                                        cDNA encoding a gr
DNA encoding the m
                                                                                                                                                                                                                                                                                         DNA encoding EGFP
DNA encoding EBFP
DNA encoding ECFP
                                                                                Sequence encoding
                                                                                                                                                                                                                                         Human interleukin
                                                                                                                                                                                                                                                    Dominant-negative
                                                                                                                                                                                                                      S. coelicolor Ye Rat DTDST cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                             Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine mature interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RS
                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1i; Page 239-240; 264pp; English
                                                                                                                                                                    F21337
A35209
                                                                                                                                                                                                  255552
C38383
                                                                                                                                                                                                                     248297
X78074
                                                                                                                                                                                                                                                                                         A27573
A27574
A27575
C62377
                                                                                                                    A35216
                                                                                                            F21338
                                                                                                                                                 056693
                                                                                                                                                                                         A35215
                                                                                                                                                                                                                                                  V48405
                                                                                                                                                                                                                                                             A93373
                                                                                                                                                                                                                                                                                                                                 Z45644
                                                                               056692
                                                                                                                               028943
                                                                                                                                       028947
                                                                                                                                                           F21331
                                                                                                                                                                                                                                                                       A93374
                                                                                                  A35211
                                                                                                                                                                                                                                                                                 A9337
                                                                                                                                                                                                                                                                                                                                                                                                               ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                      55/c
255565 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
          272
278
336
1270
1282
1282
1282
1282
14978
14978
336
                                                                                                                                       1297
1212
5670
5670
5670
5670
166
                                                                                                                                                                                                           479
1896
2792
66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris.
P-PSDB; Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999
                                                         187.4
187.4
187.4
187.4
187.4
187.4
185.8
185.8
171.4
71.4
71.4
39
          240
218
187.4
187.4
                                                                                                                                                                                                                               255565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                           RESULT
255565/
0000000000
                                                                                                                                                                                                                                                                                                                                                                                                                        Canine mature inte
Canine mature inte
Canine interleukin
Canine interleukin
Canine interleukin
Canine mature inte
Canine mature inte
Canine interleukin
Canine interleukin
Canine interleukin
                                                                            (without alignments)
408.135 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                            tctgaaatttccatggcgat........gggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                                                                                                                                                                         cgn1_8/gcdata/geneseq/geneseqn/Mal981_DAT:

cgn1_8/gcdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal981_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal991_DAT:

cgn1_8/gcgdata/geneseq/geneseqn/Nal994_DAT:
                                                                  May 13, 2001, 14:30:26; Search time 472.02 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cgnl_8/gcgdata/geneseq/geneseqn/NA1996.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1997.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1998.DAT:*/cgnl_8/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn1_8/gcgdata/geneseq/genesequ/mnzvvv......
/cgn1_8/gcgdata/geneseq/geneseqn/NA2001.DAT:*
                                                                                                                                                                                                                                                                                                   /cgn1_8/gcgdata/geneseq/geneseqn/NA1980.DAT:*
                                                                                                                                                                                                  1356552
         GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                hits satisfying chosen parameters:
                                                                                                                                                                            678276 segs, 291890651 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                          Maximum Match 100%
Listing first 45 summaries
                                               - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255565
255566
255563
255564
255561
255561
2555562
255556
255556
255556
255556
255556
255556
255556
255556
                                                                                                                                                IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     П
                                                                                                         US-09-451-527-106
                                                                                                                                                                                                                   seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                Post-processing: Minimum Match 0% Maximum Match 100
                                                                                                                                                                                                                                                                                         N_Geneseq_0401:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    390
1269
1269
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           333
393
393
1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
                                                                                                                                                                                                                                                                                                                                                                                                                                          oę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
330
330
330
330
3317
3117
3117
                                                                                                                    Perfect score:
                                                                                                                                               Scoring table:
```

Total number

Searched:

Sequence:

Title:

Minimum DB Maximum DB

Database

Result ç S

```
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
11-4, canine or felline Fit-3 ligand, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine IL-5, canine or felline CD40, canine or
felline CD154 (CD40 ligand), canine IL-5, canine interferon-alpha (IFN-alpha) and felline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
colony-stimulating factor (GMCSF), and inhibitors may be used as
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
andulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gateactteaattttggtgteteggetgegtteactggaaateeetgeegeggettttg 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacatt 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 getgeegttgeagaggatgeetgattetgggtgatgttgaccagetecteatgagete 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCACTTCAATTTTGGTGTCTCGGCTGCGTTCACTGGAAATCCCTGCCGCGGGCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90 GCTGCCGTTGCAGAGGGATGCCTGATTCTGGGTGATGTTGACCAGCTCCTCAATGAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tetgaaattteeatggegataaaeteeettaeataggtgageaggttttteaeeaaetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        , O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine mature interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 330; DB 21; 100.0%; Pred. No. 1.3e-88;
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 330 BP; 88 A; 96 C; 82 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z55566 standard; cDNA; 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                              and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z55566
ID Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
```

```
and 78 respectively. The invention relates to canine
anterferon-alpha (IFN-alpha) and feline granulocyte macrophage
anterferon-alpha (IFN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides may be used as
anceled actions. The proteins. Their sasociated
nucleic acids, specific antibodies and inhibitors may be used as
vaccines for therapeutic or prophylactic regulation of an immune
and an also be used to treat autoimmune or infectious diseases including
allerates, tumours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
an also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                        Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match 100.0%; Score 330; DB 21; Best Local Similarity 100.0%; Pred. No. 1.3e-88; Matches 330; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 330 BP; 64 A; 82 C; 96 G; 88 T; 0 other;
                                                                                                                  Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cttgagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                     Claim 1i; Page 241; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
99WO-US11942.
                                                                                                                  Yang S, Dreitz MJ,
                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z55563 standard; cDNA; 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and in drug targetting.
                                                                                                                                                   WPI; 2000-072623/06
                                                                          (HESK-) HESKA CORP
                                                                                                                                                                           P-PSDB; Y58224
                                     29-MAY-1998;
                                                                                                                Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
255563/c
ID 2555
XX
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
```

ö

210 GATCAGAGATTCTAGAGCTGCGCAGTACATGCCGGCGGTCAGGTTGACGCTCCACACCAT 151

```
Sequences 25552-255560 and 255561-255566 represent cDNA
sequences encoding canine interleukin-13 (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or
feline CD154 (CD40 ligand), canine IL-13, feline
interferon-alpha (IRV-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated °
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
allergies, tunnours, inflammation and graft rejection, and to increase
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
mucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 390;
                                                                                                              1mmune
                                                                         Canine interleukin-13 (IL-13) clone 78 cDNA coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                              Interleukin-13; IL-13; antibody; canine; inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 390 BP; 92 A; 117 C; 99 G; 82 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 330; DB 21;
100.0%; Pred. No. 1.4e-88;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 238-239; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                      98US-0087306
                                    14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best_Local Similarity 100.
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                     2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                           (HESK-) HESKA CORP.
                                                                                                                                                                    Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; Y58223.
                                                                                                                                                                                                       WO9961618-A2.
                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                Sim G,
```

```
Matches 330; Conservative
                                                                                                                                                                                                  Similarity
                                                                                                                                                                                  Query Match
Best Local 8
                                                                                                                                                                                               gatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccat 240
gatcacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttg 120
                                                                                                                                 agagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacatt 180
                                                                                                                                                GATCACTTCAATTTTGGTGTCTCGGCTGCGTTCACTGGAAATCCCTGCCGCGGGGCTTTTG
                                                               61
                                                                                                330
                                                                                                                                                              270
                                                                                                                                121
                                                                                                                                                                                               181
```

94 04 05 ö

Gaps

ö

Indels

0; Mismatches

```
Sequences encoding caning interletion. Common of Sequences encoding caning interletion. Common of Sequences encoding caning interletion relates to caning and 78 respectively. The invention relates to caning to the confidence of feline Filt-13 ligand, caning or feline CD154 (CD40 ligand), caning IL-13, caning IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colory-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while concluded the confidence of a protein primary and confidence of a first confidence of a protein primary and confidence of a first confidence of a major of a protein primary and confidence of a first confidence of a major of a protein primary and confidence of the response from a co-administered antigen. The nucleotide fragments are useful as probes, as amplification primary and confidence of the relation of a major of a maj
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as sources of inhibitory therapeutics (e.g., antisense oligonucleotides) The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canine interleukin-13 (IL-13) clone 78 cDNA coding region complement.
                                                        91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequences 25552-255560 and 255561-255566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 390 BP; 82 A; 99 C; 117 G; 92 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 330; DB 21; 100.0%; Pred. No. 1.4e-88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wonderling RS;
                                                                                                              330
                                                                                                           cttgagggttggggagggagtcacagggct
                                                                                                                                                                    CTTGAGGGTTGGGGAGGGAGTCACAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim li; Page 239; 264pp; English.
                                                                                                                                                                                                                                                                                                       255564 standard; cDNA; 390 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; Y58223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                             255564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G,
                                                                                                           301
                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                           δ
```

```
Immunoregulatory proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z55562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z55562
.
28888888888888888
                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                              120
                                                                                                                                                                 180
                                                                                                                                                                                                   180
                                                                                                                                                                                                                                          240

    24.1 gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc 300
    24.1 gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc 300

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 colony-stimulating factor (GMCSF), and nucleotides which encode these
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                 9
                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from cats or dogs, autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences 25552-25550 and 25551-25566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline RIL-3 ligand, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage
                                                                                        tctgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg
                                    /*tag= a
/product= "Canine IL-13 clone 78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins useful for treating or preventing e.g. tumors or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 78 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                          cttgagggttggggaggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 11; Page 235-236; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z55561/C

Z55561/C

Z55561;

XX

Z55561;

XX

Z55561;

XX

Z5561;

XX

Z5113;

Z511000

                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                          61
                                                                                          61
                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                          301
                                            9
                                                                                        ò
                                                                                                                       q
                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                               pp
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                               ò
                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                          á
```

```
ö
            nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oilyannucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gatcagagattctagagctgcggtacatgccggcggtcaggttgacgctccaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1269;
their associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin-13 (IL-13) clone 78 cDNA complement.
                                                                                                                                                                                                                                                                                                                                    Sequence 1269 BP; 302 A; 320 C; 340 G; 307 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 100.0%; Score 330; DB 21; Best Local Similarity 100.0%; Pred. No. 2.1e-88; Matches 330; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= a
/product= "Canine IL-13 clone 78"
The proteins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cttgagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers complement (821..1213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255562 standard; cDNA; 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                         and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris,
```

```
29-MAY-1998;
                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Simi
Matches 330;
                                                                                                                                                                       02-DEC-1999
                                                                                                                                                                                                                                                                                                              Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                  Sequences encoding canine interleuring (IL-13) clones 80
and 78 respectively. The invention relates to canine
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine or feline Fit-3 ligand, canine IL-13, feline
IL-4, canine colfs (CD40 ligand), canine IL-5, canine IL-13, feline
interferon-alpha (IRN-alpha) and feline granulocyte macrophage
colony-stimulating factor (GMCSF), and nucleotides which encode these
immunoregulatory proteins. The proteins, their associated
immunoregulatory proteins. The prophylactic regulation of an immune
can immunore for interapeutic or prophylactic regulation of an immune
response in animals (particularly cats, dogs, horses and humans).
They may be used to treat autoimmune or infectious diseases including
the response from a co-administered antigen. The nucleotide sequences
can also be used for the recombinant production of a protein, while
nucleotide fragments are useful as probes, as amplification primers and
as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
The proteins may be used to raise antibodies and to screen for
andulators of activity, while the antibodies may be used in detection,
and in the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacatt 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gatcacttcaattttggtgtctccggctgcgttcactggaaatccctgccgcgggcttttg 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                  Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 gctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 totgaaatttocatggogataaactccccttacataggtgagcaggtttttcaccaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                     Sequences Z5552-Z55560 and Z55561-Z55566 represent cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1269 BP; 307 A; 340 C; 320 G; 302 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 330; DB 21;
ilarity 100.0%; Pred. No. 2.1e-88;
Conservative 0; Mismatches 0;
                                                   Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cttgagggttggggagggagtcacagggct 330
                                                                                                                                                                                    Claim 1i; Page 237-238; 264pp; English
                                                   Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Z55559 standard; cDNA; 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug targetting.
                                                                                 WPI; 2000-072623/06.
P-PSDB; Y58223.
               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                 ပွဲ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
255559/c
ID 2555
                                                   Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

```
sequences encoding canine interleusing interior interior supportances concoding canine interleusing interior in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    213 TTGAGAGCACAGTGCTTTCAGCATCCTCTGGGTCCTTTGGATGGCGCTGCAGTCGGAGAC 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  catgctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgag 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
Immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  totgaaatttocatggogataaactccccttacataggtgagoaggtttttcaccaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gatcacttcaattttggtgtctcggctgcgttcactggaaat---ccctgccgcgggctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCACTTCAATTTTGGTGTCTCGGCTGCGTTCACTGGAAATCTGCCCTGCCGCGGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 ttgagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٠,
ش
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequences 25552-255560 and 255561-255566 represent cDNA
mature interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 333 BP; 89 A; 97 C; 83 G; 64 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96.1%; Score 317; DB 21;
99.1%; Pred. No. 9.1e-85;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 233-234; 264pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                          Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; Y58222
```

ı,

9

attgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacac 181 attgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacac ctccttgagggttggggagggagtcacagggct 330 301 ctccttgagggttggggaggagtcacagggct 333

298

61

61

1 tctgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg gateactteaattttggtgtctcggctgcgttcactggaaat---ccctgccgcgggctt 237

```
25557
                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                             Dp
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                qq
                             ò
                                                                                    ŏ
                                                                                                                                                                    g
                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences 255552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine conferince conference of feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GGCSF), and nucleotides which encode these interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GGCSF), and nucleotides which encode these inmunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allerates, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection, and also the contraction of activity, while the antibodies may be used in detection, and also the contraction of activity.
              34
                                                                                                                                                                                                                                                       Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
immunoregulation; tumour; cancer; autoimmune disease; vaccine;
                                                                                                                                                                                                                           Canine mature interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 333 BP; 64 A; 83 C; 97 G; 89 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yang S, Dreitz MJ, Wonderling RS;
                                        298 ctccttgagggttggggagggagtcacagggct 330
                                                       Claim 11; Page 235; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                                                                        255560 standard; cDNA; 333
                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                        (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                 Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; Y58222
                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                      02-DEC-1999
                                                                                                                                                                    255560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G,
                                                                    33
                                                                                                                        255560
ID 25
                                                                                                                                                        q
                                                                  g
                                        ò
```

Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.

Canis familiaris.

WO9961618-A2

02-DEC-1999

99WO-US11942.

28-MAY-1999; 29-MAY-1998;

98US-0087306

(HESK-) HESKA CORP.

Canine interleukin-13 (IL-13) clone 80 cDNA coding region.

(first entry)

14-MAR-2000

255557;

BP.

7/c 255557 standard; cDNA; 393

```
conquences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine conformed for a ligand, canine or feline CD154 (CD40 19gand), canine IL-15, canine IL-13, feline interferon alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allerajes, thmours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while
                                                                                                                                                                                                                                                            Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences 25552-255560 and 255561-255566 represent cDNA
Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 232-233; 264pp; English.
Sim G, Yang S, Dreitz MJ,
                                                                                           WPI; 2000-072623/06.
                                                                                                                                                      P-PSDB; Y58221
```

ä

Gaps

<u>ښ</u>

96.1%; Score 317; DB 21; Length 333; 99.1%; Pred. No. 9.1e-85; ive 0; Mismatches 0; Indels

Best Local Similarity 99.1%; Matches 330; Conservative

ö

Query Match

1. tctgaaatttccatggcgataaactcccttacataggtgagcaggtttttcaccaactg 60

```
..
...
nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                         Gaps
                                                                                                                                               1 tctgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canine interleukin-13 (IL-13) clone 80 cDNA coding region complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
                                                                                                                          3;
                                                                                                   Length 393;
                                                                                                                          Indels
                                                                 Sequence 393 BP; 93 A; 118 C; 100 G; 82 T; 0 other;
                                                                                                   Query Match 96.1%; Score 317; DB 21; Best Local Similarity 99.1%; Pred. No. 9.7e-85; Matches 330; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                      Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding immunoregulatory useful for treating or preventing e.g. t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 11; Page 233; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z55558 standard; cDNA; 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                             and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; Y58221.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sim G,
                                                                                                                                                                                                                                                                                                                                                                        298
                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
 8
                                                                                                                                               ò
                                                                                                                                                                   셤
                                                                                                                                                                                         ò
                                                                                                                                                                                                             q
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                         QQ
```

```
Sequences 25552-25560 and 255561-25566 represent cDNA.

Sequences encoding canine interleukin-13 (IL-13) clones 80

and 78 respectively. The invention relates to canine

IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or

IL-4, canine or feline Fit-3 ligand, canine IL-13, feline

CL interferon-alpha (IRN-alpha) and feline granulocyte macrophage

CC interferon-alpha (IRN-alpha) and feline granulocy interferon

CC response in animals (particularly cats, dogs, horses and humans).

CC They may be used to treat autoimmune or infectious diseases including

CC an also be used for the recombinant production of a protein, while

CC an also be used for the recombinant production of a protein, while

CC an also be used for the recombinant production of a protein, while

CC as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).

CC The proteins may be used to raise antibodies and to screen for

CC modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118 ttgagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagac 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 tetgaaattteeatggegataaaeteeettaeataggtgageaggttttteaeeaaetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        catgctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٠.
ش
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 393 BP; 82 A; 100 C; 118 G; 93 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           96.1%; Score 317; DB 21; 99.1%; Pred. No. 9.7e-85; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Canine IL-13 clone 80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canine interleukin-13 (IL-13) clone 80 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctccttgagggttggggaggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z55555 standard; cDNA; 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best_Local Similarity 99.1
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52..447
/*tag=
                                                                                                                                                                                                                                                                                                                                                                   and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z55555;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
255555/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
```

1;

```
255556 standard; cDNA; 1302 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -
  RESULT
             255556
                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                              Sequences 255552-255560 and 255561-255566 represent cDNA sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine of and 78 respectively. The invention relates to canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these inneries specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including alley may be used to treat autoimmune or infectious diseases including also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for and in drun targetting, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    444 TCTGAAATTTCCATGGCGATAAACTCCCCTTACATAGGTGAGCAGGTTTTTCACCAACTG 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                               Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tctgaaatttccatggcgataaactcccttacataggtgagcaggttttcaccaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         catgctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .,
e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96.1%; Score 317; DB 21; Length 1302; 99.1%; Pred. No. 1.5e-84; ive 0; Mismatches 0; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1302 BP; 337 A; 318 C; 340 G; 307 T; 0 other;
                                                                                                          Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctccttgagggttgggggagggagtcacaggggct 330
                                                                                                                                                                                              Claim 11; Page 229-230; 264pp; English
                                          99WO-US11942.
                                                               98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 99.1
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               and in drug targetting.
                                                                                                                              2000-072623/06
                                                                                     (HESK-) HESKA CORP.
                                                                                                                              WPI; 2000-0726;
P-PSDB; Y58221
W09961618-A2
                                          28-MAY-1999;
                                                               29-MAY-1998;
                    02-DEC-1999
                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٦
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         144
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
sequences encoding canine interior inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       859 tctgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gatcacttcaattttggtgtctcggctgcgttcactggaaat...ccctgccgcgggctt 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acids encoding immunoregulatory proteins from cats or dogs, for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tctgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequences 25552-25550 and 255561-255566 represent cDNA
                                                                                                                                                                                             Canine interleukin-13 (IL-13) clone 80 cDNA complement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1302 BP; 307 A; 340 C; 318 G; 337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96.1%; Score 317; DB 21;
99.1%; Pred. No. 1.5e-84;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/product= "Canine IL-13 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 11; Page 231-232; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (856..1251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0087306
                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-072623/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; Y5822]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                              14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic
255556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
```

ä

σ

q

g

ò

q ò

ò

qq

```
and in drug targetting.
                                                                                              Query Match
                                                                                                                 Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z5554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim G,
                                                                                                                                                                                                                                                                                                                  195
   SXS
                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                            pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences 25552-25560 and 255561-25556 represent CDNA, sequences encoding canine interleukin-13 (IL-13) clones 80 and 78 respectively. The invention relates to canine and 78 respectively. The invention relates to canine or felline CDL4, canine or felline CDL5 (CD40 ligand), canine IL-3, canine IL-13, felline construction or felline CDL5 (CD40 ligand), canine IL-5, canine IL-13, felline construction or felline CDL5 (CD40 ligand), canine IL-5, canine in IL-3, felline colony-stimulating factor (GMCSF), and nucleotides which encode these colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The prophilactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while a sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                    1039 attgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacac 1098
                                                                                                                              attgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacac 237
                 919 gatcacttcaattttggtgtctcggctgcgttcactggaaatctgccctgccgcgggctt 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; IL-13; antibody; canine; inhibitor; immune respons
immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
 Canine interleukin-13 (IL-13) cDNA fragment nCaIL13-272.
Yang S, Dreitz MJ, Wonderling RS;
                                                                                                                                                                                                                                                                              ctccttgagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 11; Page 228; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998; 98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                     Z55553 standard; cDNA; 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                           Z5553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sim G,
                                                                                                                            178
                                                                                                                                                                                                                                                                          298
```

```
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequences encoding canine interleukin-13 (IL-I3) Clones 80 and 78 respectively. The invention relates to canine IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nuclectides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
                                                                                                                                                                                                                              78 tgtctcggctgcgttcactggaaat---ccctgccgcgggcttttgagagcacagtgctt 134
                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                        254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255 gggatgcctgattctgggtgatgttgaccagctcctcaatgagctccttgagggttgggg 314
                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92 GGGATGCCTGATTCTGGGTGATGTTGACCAGCTCCTCAATGAGCTCCTTGAGGGTTGGGG 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            152 GAGCTGCGCAGTACATGCCGGCGGTCAGGTTGACGCTCCACCACCATGCTGCCGTTGCAGA
                                                                                                                                                                                                                                                                                                      135 teageatectetgggteetttggatggegetgeagteggagacattgateagagatteta
                                                                                                                                                                                                                                                                                                                                                                                                                           gagetgegeagtacatgeeggeggteaggttgaegeteeacaceatgetgeegttgeaga
                                                                                                                                            3;
                                                                                  Length 272;
                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences 25552-255560 and 255561-255566 represent cDNA
Sequence 272 BP; 64 A; 91 C; 69 G; 48 T; 0 other;
                                                                                                                                         0
                                                                                  72.7%; Score 240; DB 21; 98.8%; Pred. No. 5.7e-62;
                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin-13 (IL-13) cDNA probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wonderling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 11; Page 229; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255554/c
ID 255554 standard; cDNA; 278 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315 aqqqaqtcacaqqqct 330
                                                                                                                                      Matches 253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32 AGGGAGTCACAGGGCT 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06.
                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-DEC-1999.
```

Claim 11; Page 60; 78pp; French.

```
ö
           response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                      113 ggcttttgagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcg 172
                                                                                                                                                                                                                                                                                                                                            cacaccatgctgccgttgcagagggatgcctgattctgggtgatgttgaccagctcctca 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Labit-le Bouteiller C;
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                       GCCTTTTGAGAGCACAGTGCTTTCAGCATCCTCTGGGTCCTTTGGATGGCGCTGCAGTCG
                                                                                                                                                                                                                                                                                                                             173 gagacattgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctc
                                                                                                                                                                                                                                                                                                                                                                                                   for therapeutic or prophylactic regulation of an immune
                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/note= "encodes Gly at position 41 of cytokine"
                                                                                                                                                                                                               Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chemotaxis; immunomodulation; inflammation; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                           Indels
                                                                                                                                                                    Sequence 278 BP; 58 A; 93 C; 69 G; 58 T; 0 other;
                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                              Score 218; DB 21;
; Pred. No. 1.9e-55;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            atgagctccttgagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kaghad M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAGCTCCTTGAGGCTTGGGGAGGGAGTCACAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gly41-Cytokine coding sequence Nal'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Guillemot J,
M, Minty A;
                                                                                                                                                                                                               66.1%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92EP-0400858.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q28944 standard; DNA; 336
                                                                                                                                                                                                            Query Match 66.1
Best Local Similarity 100.
Matches 218; Conservative
                                                                                                                                           and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1..336
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Caput D, Ferrara P,
Leplatois P, Magazin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; R27347.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interleukin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EP506574-A.
 vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        028944;
                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                        218
                                                                                                                                                                                                                                                                                                                                                                                    233
                                                                                                                                                                                                                                                                                                                                                                                                                                            293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
Q28944/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
g
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
```

Search completed: May 13, 2001, 14:30:27 Job time: 18342 sec

```
T lymphocytes were induced by phorbol-2-myristate-3-acetate (PMA) and phytohaemaglutinin (PHA). Poly (A)+ RNA was isolated from the cells and reverse transcribed to cDNA. The CDNA was subjected to hybridisation with polyA RNA from the monkey kidney cell line (COS3. DNA specific for peripheral blood mononuclear cells (PBMC) (i.e. which did not hybridise) was cloned in PSE1 to construct a DNA bank. The bank was screened with cDNA prepared from PBMC which had been stimulated with PMA (and opt.PHA) and with a mixture of clong colliquous specific to other cytokines. One positive clone (i.e. which hybridised more strongly to cells induced with PHA and PMA, c.f. PMA alone, and did not hybridise to known cytokine (i.e. which hybridised more strongly to cells induced with PHA and PMA, c.f. PMA alone, and did not hybridise to known cytokine two potential ATG initiation codons and four potential signal capavage sites. A second positive clone differed only in the identity of codon 41 which was GGC (Gly) in stead of GAC (Asp).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 teactteaattttggtgteteggetgegtteaetggaaa---teeetgeegggetttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240 tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       334 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94 recreccarrecadadeseascerrersegricissersargricaceaceascrecrears
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120 gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180 tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .4e-46;
es 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 336 BP; 80 A; 95 C; 90 G; 71 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 187.4;
Pred. No. 2.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gctccttgagggttggggggggggtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56.8%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    See Q28941-Q28947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34
\begin{smallmatrix} \mathbf{A} & \mathbf{X} & \mathbf{D} 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

2

5, Appli 3, Appli 7, Appli 7, Appli 14, Appl 2, Appli 1, Appli 630, Appli 630, Appli

Appl

Sedneuce:

Run on:

Searched:

Database

Result Š. 

```
Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                                                       Sequence 12,
Sequence 14,
Sequence 17,
                                                                                                                                                                         Sequence 1
Sequence 6
Sequence 5
                                                                                                          Sequence Sequence S
                                                                                                                                                                                                                            Sequence
                                Sequence
                                                 Sequence
                                                                Sequence
                                                                             Sequence
                                                                                               Sequence
                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                        US-08-818-252-3
US-08-818-252-7
US-09-818-252-7
US-09-311-581-14
US-08-978-182-2
US-09-205-681-2
US-09-060-756-630
US-09-060-756-630
US-09-094-359-5
US-09-094-359-9
                                                                                                                                                                                                                                       US-09-172-063-12
US-09-172-063-14
US-09-172-063-17
                             US-08-818-252-1
US-08-818-252-5
US-08-818-253-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           activity, recombinant transformed cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: LEPLATOIS, PASCAL
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, MOURAD
APPLICANT: LABIT-LE BOUTELLER, Christine
APPLICANT: MAGAZIN, MATIJYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 3000 K Street, N.W., Suite 500 CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION: 43.

APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR.91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR.91 03904
APPLICATION NUMBER: FR.91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
REFERCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION:
TELEPHONE: (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                              FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                Sequence 24, Application US/08371121 Patent No. 5652123 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: act:
TITLE OF INVENTION: act:
TITLE OF INVENTION: trat
MUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LAI
1929
1929
1929
1929
1959
1971
1971
1926
1926
1926
720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20007-5109
                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-24/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT
 00000000000
                                                                                                    May 13, 2001, 14:21:47 ; Search time 226.02 Seconds (without alignments) 254.928 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 15, Appli
Sequence 17, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 27, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguence 40,
Seguence 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                   tctgaaatttccatggcgat......gggggagggagtcacagggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgnl_7/ptodata/1/ina/5A_COMB.seq:*
/cgnl_7/ptodata/1/ina/5B_COMB.seq:*
/cgnl_7/ptodata/1/ina/6A_COMB.seq:*
/cgnl_7/ptodata/1/ina/6B_COMB.seq:*
/cgnl_7/ptodata/1/ina/PcTUS_COMB.seq:*
/cgnl_7/ptodata/1/ina/PcTUS_COMB.seq:*
           GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-371-121-17
US-08-371-121-17
US-08-594-469-4
US-08-996-957-4
US-08-371-121-26
US-08-371-121-26
US-08-373-3
PCT-US93-07645A-3
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-094-359-7
US-09-172-063-11
US-09-172-063-13
US-08-532-390-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                rotal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT-US93-07645-1
US-08-371-121-2
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-128-450-27
US-09-094-359-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-717-294-40
US-09-094-359-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-172-063-29
US-09-085-305-5
                                                                                                                                                                                                                                                                                    302621 seqs, 87301344 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                            Maximum Match 100%
Listing first 45 summaries
                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                    IDENTITY_NUC Gapor 10.0 Gapor 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Issued_Patents_NA:*
                                                                                                                                                                       US-09-451-527-106
                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0% Maximum Match 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187.4
1887.4
1887.4
1885.8
1885.8
1882.6
1821.4
1511.4
1511.4
1331.4
333.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                      Scoring table:
```

```
120 gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258 TGATCAGGGATTCCAGGCTGCACAGTACATGCCAGCTGTCAGGTTGATGCTCCATACCA 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318 GCGGGCAGAATCCGCTCAGCATCCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180 igaicagagatictagagcigcgcagiacaigccggcggicaggitgacgciccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 187.4; DB 1;
Pred. No. 3.5e-50;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297 gctccttgagggttgggggaggcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 GCTCCCTGAGGGCTGTAGAGGGAGGCACAGGGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                             DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
PCT-US93-07645A-1/C
; Sequence 1, Application PC/TUS9307645A
; GENERAL INFORMATION:
                                                                                  NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX03(
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENTH: 1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                           56.8%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 56.8
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                               nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                       45..443
                                                                                                                                                                                                                                                                                   linear
       CLASSIFICATION:
                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY:
; LOCATION:
US-08-012-543-1
                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                     63 teacticaatittiggigieteteggetgegiteaciggaaa---teeetgeegeggetiti 119
                                                                                                                                                                                                                                                                                                                                                                                                                         gagagcacagtgetttcagcatectetgggteetttggatggegetgeagteggagaeat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                         3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                     274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAACTGCCCAGCTGAGACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154 TGATCAGGGATTCCAGGGCTGCACAGTACATGCCAGCTGTCAGGTTGATGCTCCATACCA
                                                                                                                                                                                                               Length 336;
                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                             2.1e-50;
                                                                                                                                                                                                           56.8%; Score 187.4; 76.9%; Pred. No. 2.16
                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gctccttgagggttgggggggggggtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Culpepper, Janice
McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Bancheren, Jacques APPLICANT: Ge Vries, Jan APPLICANT: Zurawski, Gerard TITLE OF INVENTION: Human Interit NUMBER OF SEQUENCES: 27 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: DNAX REST. CTREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/08012543
Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIOPPY disk ... UOPPY disk ... OPERATING SYSTEM: PC-DOC SPERATING SYSTEM: PC-DOC ... PROFILE ...
                                                                                                                                       MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
   (202) 672-5399
                                                                  LENGTH: 336 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TELEFAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Palo Alto
STATE: California
COUNTRY: USA
                                                                                                                           linear
                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 256; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                     TYPE: nucleic
STRANDEDNESS:
TOPOLOGY: line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
US-08-012-543-1/c
                                                                                                                                                         US-08-371-121-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.80
                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34
                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
```

; ;

Gaps

. 9

```
STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gagageacagtgettteageateetetgggteetttggatggegetgeagteggagaeat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18 GCGGCAGAATCCGCTCAGCATCTTTGGATCTTCTCGATGGCACTGCAGCCTGACAGT 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tgctgccgttgcagagggatgc...ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                   Length 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                                                                                                                                                                                                            Score 187.4; DB 5
Pred. No. 3.5e-50;
0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                138 GCTCCCTGAGGCTGTAGAGGGAGGCACAGGGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: MICROSOFT WORD 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DAT
                                                     US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                            56.8%;
76.9%;
                                                                                    FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
29-JAN-1993
                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 1290 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1290 base pairs
                                                                                                                                                                                                                                                                                                                                                                                            Query Match 56.8
Best Local Similarity 76.9
Matches 256; Conservative
                            PRIOR APPLICATION DATA: APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TOPOLOGY: linear
PCT-US93-07645-1
                                                                                                                                                                                                                                                                         linear
   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645-1/c
                                                                                                                                                                                                                                                                      ;
PCT-US93-07645A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
APPLICANT: CAPUT. Daniel
APPLICANT: CAPUT. Daniel
APPLICANT: GLELEMOT. Jean-Claude
APPLICANT: GUILLEMOT. Jean-Claude
APPLICANT: GUILLEMOT. Pascal
APPLICANT: MANYY. Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: AAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
CORRESPONDENCE ADDRESS:
ADDRESS: 27
CORRESPONDENCE ADDRESS:
                                              5
                                                                                                                                                                                                                                                                                                                                                             63 teactteaattttggtgteteggetgegtteaetggaaa---teeetgeeggggetttt 119
                                                                                                                                                                                                                                                                       120 gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  198 TGCTGCCATTGCAGAGCGGAGCCTTCTGGGTTGTGATGTTGACCAGCTCCTCAATGA 139
                                                                                                                    378 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 319
                                                                                                                                                                                                                                                                                                                 318 GCGGGCAGAATCCGCTCAGCATCCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT 259
                                                                                          3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                ģ
    Length 1290;
                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
    DB 5;
Score 187.4; DB 5
Pred. No. 3.5e-50;
0; Mismatches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: PCT/FR92/00280 FILING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NO-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/0028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/371,123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOLEY & LARDNER
  56.8%;
Query Match
Best Local Similarity 76.9
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-371-121-2/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Wa
```

```
297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Protein having a cytckine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 teacticaatitiggigteteteggetgegiteaciggaaa---teecigeegeggetitt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          334 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240 tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180 tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccaccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                       Length 336;
                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                       Query Match 56.3%; Score 185.8; DB 1; Best Local Similarity 76.6%; Pred. No. 6.7e-50; Matches 255; Conservative 0; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEFLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 16781/383
TELECOMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEPAX: (202) 672-5399
FR 91 03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 15, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
            FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOLEY & LARDNER
                                                                                                                                                                                                                                                                                 MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MAGAZIN, Marilyn
                                                                                                                                                                                                             LENGTH: 336 base pairs
TYPE: nucleic acid
                                                                                                                                                    TELEX: 904136,
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAPUT, Daniel
                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3000 K
                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-371-121-15/c
                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                     US-08-371-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
```

```
63 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggcttt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      390 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACTTGT 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56.3%; Score 185.8; DB 1; Length 1297; 76.6%; Pred. No. 1.1e-49; cive 0; Mismatches 72; Indels 6;
                                           SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gctccttgagggttggggaggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150 GCTCCCTGAGGGCTGTAGAGGGAGGCACAGGGC 118
                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
FILING DATE: 30 NOV-1992
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BETNHARD D.
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 28,665
REGISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                             APPLICATION NUMBER: US/08/371,12:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (202) 672-53
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGIH: 1297 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELERAX: (202) 672-539-
TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 76.6
Matches 255; Conservative
                                                                                     CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
117..452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15..452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY:
; LOCATION:
US-08-371-121-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
```

```
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
                           gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                   240 tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        397 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                          tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                      tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                          175 TGATCAGGGATTCCAGGGCTGCACAGTACATGTCAGCTGTCAGGTTGATGCTCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PC-DOS/MS-DOS
SOFTWARE: PACHTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .5e-49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 182.6; I
Pred. No. 7.5e-
0; Mismatches
                                                                                                                                                                                                                                                   gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                625 Slaters Lane - Fourth Floor
                                                                                                                                                                                                                                                                            55 GCTCCCTGAGGGCCGTAGAGGGGAGGCACAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FR 95 01083 FILING DATE: 31-JAN-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4, Application US/08594469
Patent No. 5700665
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26,382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-0500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: DNA (genomic)
US-08-594-469-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55.3%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,3
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: LEGOUX, Richard APPLICANT: MALDONADO, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 425 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
STREET: 62
                                                                                                                                                                                                                                                                                                                                                         RESULT 8
US-08-594-469-4/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                    180
      120
                                                                                                                                                                                                                                                   297
                                                                                                                          염
                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                    ò
                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                       APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 teacticaattitiggigicteggetgegiteactggaaa---teectgeegggetitt 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        295 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 184.2; DB 1
Pred. No. 2.3e-49;
0; Mismatches 73
                                                                                                                                                                                                       LABIT-LE BOUTEILLER, Christine
MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: FOLEY & LAKUNLA
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATE:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERNAATION:
RESISTRATION NUMBER: 28,665
RESISTRATION NUMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT/FR92/00280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/0028
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
                                                                                                     FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                   Sequence 17, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: DNA (genomic)
US-08-371-121-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.8%;
                                                                                                                                                              APPLICANT: MINTY, Adrian APPLICANT: KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (202) 572-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 384 base pairs TYPE: nucleic acid
                                                                                    Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 55.8
Best Local Similarity 76.3
Matches 254; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             double
                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 20007-5109
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
US-08-371-121-17/c
                                                                                                                                                                                                         APPLICANT:
                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                          APPLICANT
                                                                                                                                               APPLICANT
```

3

q ò 76.0%;

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE:
                  Matches
                                                                                                                                                                                                                                                 180
                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                 .61
                                                                            q
                                                                                                                  à
                                                                                                                                               qq
                                                                                                                                                                                ò
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
TITLE OF INVENTION: presence of arginine
NUMBER OF SEQUENCES: 9
                 teacticaattiiggigicteggetgegiteaciggaaa...teecigeegggettit 119
                                                                                gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                 239
                                                                                                                                                                                                                296
                                                                                                                                                                              217 TGATCAGGGATTCCAGGGCTGCACAGTACATGCCAGCTGTCAGGTTGATGCTCCATACCA 158
                                                                                                                                                                                                              277 GCGGGCAGAATCCGCTCAGCATCTCTCGATGGCACTGCAGCTGACACGT
                                                                                                                                                 tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,957 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                         gctccttgagggttggggaggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 625 Slaters Lane - Fourth Floor CITY: Alexandria
                                                                                                                                                                                                                                                                                                              97 GCTCCCTGAGGCCAGTACTGGGAGGCACAGGGC 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: FICHTER, Richard E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: FR 95 01083
FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/08906957 Patent No. 5856142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                LEGOUX, Richard
MALDONADO, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (703) 683-05C
TELEFAX: (703) 683-1080
INFORMATION FOR SEQ ID NO: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 425 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 22314
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 06
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE:
US-08-906-957-4
                                                                                                                                                                                                                                                                                                                                                                                 US-08-906-957-4/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                120
                                                                                                                                               180
                                              g
                                                                              ò
                                                                                                             g
                                                                                                                                               ò
                                                                                                                                                                           g
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                 ð
```

```
method for the extraction of periplasmic proteins of prokaryotic microorganisms in the pesence of arginine
                                        <u>``</u>
                                                                                                                                                                  63 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                             337 CCACCTCGATTTTGGTGTCTCGGACATGCAAGCTGGAAAACTGCCCAGCTGAGACCTTGT 278
                                                                                                                                                                                                                                                                           277 GCGGCAGAATCCGCTCAGCATCTCTGGGTCTTCTCGATGGCACTGCAGCCTGACACGT 218
                                                                                                                                                                                                                                                                                                                                                                  397 TGAACCGTCCCTCGCGAAAAGTTTCTTTAAATGTAAGAGCAGGTCCTTTACAAACTGGG 338
                                                                                                                                                                                                                                                                                                                                                                                                                               240 tgctgccgttgcagagggatgc---ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                       tgaaatttccatggcgataaactcccttacataggtgagcaggttttcaccaactgga
                                                                                                                                                                                                                                                         gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat
                                                                                                                                                                                                                                                                                                                                              tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaca
Pred. No. 7.5e-49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PatentIn Release #1.0, Version #1.25
                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297 geteettgagggttggggagggagteacaggge 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F: 625 Slaters Lane - Fourth Floor Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCCCTGAGGGCAGTACTGGGAGGCACAGGGC 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/594,469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FF 95 01083
FILING DATE: 31.7An-1995
ATTORNEY/AGENT INFORMATION:
NAME: FIGHTER, Richard E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/08594469
Patent No. 5700665
GENERAL INFORMATION:
APPLICANT: LEGGUX, Richard
APPLICANT: MALDONADO, Paul
APPLICANT: SALOME, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacon & Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (703) 683-1080 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4410 base pairs
                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: SALOME, Marc
TITLE OF INVENTION: Met
TITLE OF INVENTION: per
TITLE OF INVENTION: pre
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Virginia
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-08-594-469-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CENGTH:
```

ä

Gaps

.. 9

```
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   120 gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                           63 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                                                     3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                             Length 4410;
                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PatentIn Release #1.0, Version #1.25
                                                                                                                                                                DB 2;
                                                                                                                                                              55.3%; Score 182.6; DB 2
76.0%; Pred. No. 1.8e-48;
Live 0; Mismatches 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KGHAD, MOUVED
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  geteettgagggttggggagggggtcacaggge 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   434 GCTCCCTGAGGGCAGTACTGGGAGGCACAGGGC 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite
CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/371,12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 26, Application US/08371121
Patent No. 5652123
                                                                                        ; MOLECULE TYPE: DNA (genomic)
US-08-906-957-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                  4410 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                   Matches 253; Conservative
 SEQUENCE CHARACTERISTICS
                                 TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS: ADDRESSE: FOLEY & L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
US-08-371-121-26/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08906957

Patent No. 5856142

GENERAL INFORMATION:
APPLICANT: LEGOUX, Richard
APPLICANT: SALOME, Marc
TITLE OF INVENTION: Method for the extraction of
TITLE OF INVENTION: periplasmic proteins of prokaryotic microorganisms in the
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                          5
                                                                                                                                          63 tcacttcaattttggtgtctcggctgcgttcactggaaa---tccctgccgcgggctttt 119
                                                                                                                                                                                                                  674 CCACCTCGATTTTGGTGTCTCGGACATCCTGGAAAACTGCCCAGCTGAGACCTTGT 615
                                                                                                                                                                                                                                                                                      180 tgatcagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacacca 239
                                                                                                                                                                                                                                                                                                                                                              120 gagagcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacat 179
                                                                                                                                                                                                                                                                                                                                                                                                                tgctgccgttgcagagggatgc...ctgattctgggtgatgttgaccagctcctcaatga 296
                                                                                                                        3 tgaaatttccatggcgataaactccccttacataggtgagcaggttttcaccaactgga 62
                                                                                        6; Gaps
                                                     DB 1; Length 4410;
                                                                                        74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 22314
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/WS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                Score 182.6; DB 1
Pred. No. 1.8e-48;
0; Mismatches 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297 gctccttgagggttggggagggagtcacagggc 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         434 GCTCCCTGAGGCAGTACTGGGAGGCACAGGGC 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSE: Bacon & Thomas
STREET: 625 Slaters Lane - Fourth Floor
CITY: Alexandria
STATE: Virginia
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 31-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: FICHTER, RICHARD E
REGISTRATION NUMBER: 26,382
REFERENCE/DOCKET NUMBER: REF/LEGOUX
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 683-1080
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FR 95 01083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/594,469
                                                   55.3%;
76.0%;
                                                                                   Matches 253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
FILING DATE: 06-AUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-906-957-1/c
US-08-594-469-1
                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                           g
                                                                                                                                                                                              ò
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
```

```
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWMARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                     DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-822-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                304 gagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 168 AAGGGTCAGAGGAGAGACACAGATCT 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
PCT-US93-07645A-3/C
Sequence 3. Application PC/TUS9307645A
GENERAL INFORMATION:
                                    901 California Avenue
                                                                                                                                                                                                                                                                                                                                                            NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1212 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 225; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: double
                                                                                      COUNTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
 CORRESPONDENCE ADDRESS:
                                                      CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70..465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; NAME/KEY:
; LOCATION:
US-08-012-543-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        441 GAAGGGGCCGTGGCGAAACAGTTGCTTTGTGTGAGCTGAGCAGTTTTGTTATAAAGTGGGC 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64 cacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgaga 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             381 TACTICGATTITGGTATCGGGGAGG-----CTGGAGACCGTAGTGGGGGCCTTGCGGTT 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   327 ACAGAGGCCATGCAATATCCTCTGGGTCCTGTAGATGGCATTGCAATTGGAGATGTTGGT 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 gaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactggat 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244 gccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctcctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cagagattctagagctgcggtacatgccggcggtcaggttgacgctccacatgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 151.4; DB 1
Pred. No. 5.8e-39;
0; Mismatches 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
?PNTION: Human Interleukin-13
                  PCT/FR92/00280
                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5390
TELEFAX: (202) 672-5399
                                                              PRIOR AFFILTATION UNBER:
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION UNBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERNARD D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304 gagggttggggagggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08012543
Patent No. 5596072
GENEZL INFORMATION:
APPLICANT: Culpepper, Janice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.9%;
                                  27-MAR-1992
                                                                                                                                                                                                                                                                                                                                         LENGTH: 447 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                 TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                  FILING DATE: 27-MAR-1
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Heath,
                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
US-08-012-543-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
64 cacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgaga 123
                                                                                                                                                                                                                                                                                                                                348 ACAGAGGCCATGCAATATCCTCTGGGTCCTGTAGATGGCATTGCAATTGGAATGTTGGT 289
                                                                                                                                                                                                                                                                                                                                                                                                                                   244 gccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctcctt 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          462 GAAGGGGCCGTGGCGAAACAGTTGCTTTGTGTAGCTGAGCAGTTTTGTTATAAAGTGGGC 403
                                                                                                                                                                                                                                                 402 TACTICGATITIGGIATCGGGGAGG -----CTGGAGACCGTAGTGGGGGCCTTGCGGTT 349
                                                    Gaps
                                                                                                      4 gaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactggat 63
                                                                                                                                                                                                                                                                                                   124 gcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgat
                                                                                                                                                                                                                                                                                                                                                                                                         184 cagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccatgct
                                                    .
9
  Length 1212;
                                                 96; Indels
  DB 1;
Score 151.4; DB 1
Pred. No. 8.5e-39;
0; Mismatches 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
```

```
Search completed: May 13, 2001, 14:21:51
Job time: 17862 sec
                                                                                                                                                                                                                                                            ; TOPOLOGY:
PCT-US93-07645-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cacticaatititggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgaga 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124 gcacagtgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgat 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  348 ACAGAGGCCATGCAATATCCTCTGGGTCCTGTAGATGCCATTGCAATTGGAGTTGTTGT 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 288 CAGGGAATCCAGGGCTACACAGAACCCGCCAGGCGCCAGGTCCACACTCCATACCATGCT 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   402 TACTICGAITITGGIAICGGGAGG-----CIGGAGACCGIAGIGGGGCCCIIGCGGII 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244 gccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctcctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagagattctagagctgcgcagtacatgccggcggtcaggttgacgctccacaccatgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 151.4; DB 5;
Pred. No. 8.5e-39;
0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TILE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
RPPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
Human Interleukin-13
                                                                                                                                                                                                                                                                                                                     FILING DATE: 21-AUG-1992
: INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGHH: 1212 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                          APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                   FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB.1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN.1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
APPLICATION NUMBER: US 07/933416
                                                                         COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304 gagggttgggggagggggtcacaggggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168 AAGGGTCAGAGGAGAGACACAGATCT 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.9%;
ilarity 68.8%;
Conservative
                                    COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 225; Conservat
                    NUMBER OF SEQUENCES:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
PCT-US93-07645-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY:
PCT-US93-07645A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
```

g ò 요 δ q ò a à g ò

```
229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244 gccgttgcagagggatgcctgattctgggtgatgttgaccagctcctcaatgagctcctt 303
                                                                                                                                                                                                                                                                                                                                                                                                                                         64 cacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgaga 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 402 TACTTCGATTTTGGTATCGGGAGG-----CTGGAGACCGTAGTGGGGGCCTTGCGTT 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGTTGCACAGGGGAGTCTGGTCTTGTGTGATGTTGCTCAGCTCCTCAATAAGCTCCTT 169
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                               4 gaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactggat 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cagagattctagagctgcggtacatgccggcggtcaggttgacgctccacatgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                Length 1212;
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                    Score 151.4; DB 5;
Pred. No. 8.5e-39;
0; Mismatches 96;
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ 1D NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gagggttggggaggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.9%;
                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 68.8%;
Matches 225; Conservative
                                                                                                                                                                                            LENGTH: 1212 base pairs
                                                                                                                                                                                                                  nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                  STRANDEDNESS:
```

1;

```
May 13, 2001, 11:40:59; Search time 5997.24 Seconds (without alignments) 480.707 Million cell updates/sec
                                                                                                                                                            1 tctgaaatttccatggcgat........gggggagggagtcacagggct 330
                                                                                                                                                                                                                                                           19247034
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                               9623517 seqs, 4368049070 residues
                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                              US-09-451-527-106
330
                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                       9b_est2:*
9b_est4:**
9b_est5:**
9b_est6:**
9b_est6:**
9b_est7:**
9b_est10:**
9b_est113:**
9b_est113:**
9b_est113:**
9b_est113:**
9b_est113:**
9b_est13:**
9b_est23:**
9b_est23:**
9b_est23:**
9b_est23:**
9b_est23:**
9b_est23:**
9b_est23:**
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estba:*
em_estfun:*
em_esthum1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum6:
em_esthum7:
em_esthum8:
em_esthum9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_esthum3:
em_esthum4:
em_esthum5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_esthum2
                                                                                                                                                                                                                                                                                                                                                                                            gb_est1:
                                                                                                                                                                                                                                                                                                                                                                                 EST:*
                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                Database :
                                                                                                                                                              Sequence:
                                                                                                                                                                                                                               Searched:
                                                                               Run on:
```

```
em_estro9: *
em_estro10: *
em_estro11: *
em_estro13: *
em_estro14: *
em_estro16: *
em_estro16: *
em_estro19: *
em_estro19: *
em_estro20: *
gb_est26: *
em_esthuml3:*
em_esthuml4:*
em_esthuml5:*
em_esthuml5:*
em_esthuml7:*
em_esthuml9:*
em_esthuml9:*
em_esthum20:*
em_esthum21:*
em_esthum21:*
em_esthum22:*
em_esthum22:*
                                                                                                                                                                    em_esthum26:*
em_esthum26:*
em_esthum26:*
em_esthum27:*
em_estin1:*
em_estin1:*
em_estin3:*
em_estin3:*
em_estin3:*
em_estin1:*
em_estin1:*
em_eston1:*
em_eston1:*
em_eston2:*
em_estp11:*
em_estp13:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estro4:
em_estro5:
em_estro6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_estrol:
em_estro2:
em_estro3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9b_est30:
9b_est31:
9b_est41:
9b_est42:
9b_est43:
9b_est44:
9b_est44:
9b_est46:
9b_est46:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estro8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estro7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              991:
992:
993:
995:
1010:
1010:
1003:
1004:
1005:
1006:
1006:
```

```
em_gss_hum9:*
em_gss_inv1:*
em_gss_inv2:*
em_gss_inv3:*
em_gss_other:*
9b_est48:*
9b_est49:*
9b_est51:*
9b_est51:*
9b_est51:*
9b_est52:*
9b_est55:*
9b_est55:*
9b_est65:*
9b_est65:*
9b_est65:*
9b_est65:*
9b_est66:*

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_gss_hum5:*
em_gss_hum6:*
em_gss_hum7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_gss_hum8:*
```

|  | 2    |
|--|------|
|  | +    |
|  | ç    |
|  | 4    |
|  | ;    |
|  | 7    |
|  | +    |
|  | ;    |
| ,  | 4    |
|  | 9    |
|  | :    |
| 040W440H0W<br>                           | ŗ    |
| 0.00                                     | ť    |
|  | 5    |
| ، في | 4011 |
| E E E E E E E E E E E E E E E E E E E    | 9    |
|  | +    |
|  | Ċ    |
|  | 2    |
|  | _    |
|  | ro   |
|  | ۵    |

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

| Description                      | A2261971 RPCI-23-1 | AZ027551 RPCI-23-3 |          | BE357229 DG1_147_B | BG260311 602371427 | BF039993 BP250023B | BE705147 Sc02_08f0 | BE032541 131940 MA | BE032543 131942 MA | AI746678 ul06b05.y | A2201624 SP_0053_A | AF034173 AF034173 | BE363650 WS1_64_G1 | BE361027 DG1_69_A0 |          | BF606532 273595 MA | BE402120 CSB004F06 | BE414190 SCU007.C0 |
|----------------------------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|----------|--------------------|--------------------|--------------------|
| А                                | AZ261971           | AZ027551           | BE593226 | BE357229           | BG260311           | BF039993           | BE705147           | BE032541           | BE032543           | AI746678           | AZ201624           | AF034173          | BE363650           | BE361027           | BE127683 | BF606532           | BE402120           | BE414190           |
| DB I                             | 218                | 215                | 137      | 166                | 174                | 143                | 138                | 161                | 161                | 24                 | 217                | 14                | 166                | 166                | 163      | 150                | 166                | 166                |
| %<br>Query<br>Match Length DB ID | 477                | 521                | 277      | 537                | 757                | 462                | 507                | 535                | 546                | 570                | 965                | 2275              | 370                | 562                | 341      | 498                | 577                | 714                |
| &<br>Query<br>Match              | 11.8               | 11.8               | 11.0     | 11.0               | 10.7               | 10.4               | 10.4               | 10.4               | 10.4               | 10.4               | 10.4               | 10.4              | 10.3               | 10.3               | 10.2     | 10.2               | 10.2               | 10.2               |
| Score                            | 39                 | 39                 | 36.4     | 36.4               | 35.2               | 34.4               | 34.4               | 34.2               | 34.2               | 34.2               | 34.2               | 34.2              | 34                 | 34                 | 33.8     | 33.8               | 33.6               | 33.6               |
| Result<br>No.                    | c 1                | 0                  | о<br>С   | . C                | 2                  | و<br>د             | c 2                | د<br>8             | ი<br>ი             | c 10               | 11                 | c 12              | c 13               | c 14               | c 15     | c 16               | c 17               | c 18               |

ö

```
A2027551 521 bp DNA GSS 25-FEB-2000
RPCI-23-343M24.TJ RPCI-23 Mus musculus genomic clone RPCI-23-343M24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhao,S., Nierman,W., Feldblyum,T., Malek,J., Shatsman,S., Akinret,B., Levins,M., Mcgann,S., Tsegaye,G., Geer,K., Krol,M., de Jong,P. and Fraser,C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: szhaofetjar.org
Clones are derived from the mouse BAC library RPCI-23. For BAC
Library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://bacpac.med.buffalo.edu/orderingframe.htm)
or from Resea ch Genetics (info@resgen.com). BAC end page:
http://www.tigr.org/tdb/bac_ends/mouse/bac_end_intro.html
Plate: 343 row: M column: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                              aattttggtgtctcggctgcgttcactggaaatccctgccgcggggcttttgagagcacag 129
                                                                                                                                                                                                                                                                               130 tgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgatcagaga 189
                                                                                                                                                                                                                                                      439 AATCAGGATATGCAGACTGCCATCTCAGGCAAGACAGACTGCTAGCTTTTGTGACCACAG 380
                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                            11.8%; Score 39; DB 218; Length 477; 52.1%; Pred. No. 0.66; ... ive 0; Mismatches 80; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The Institute for Genomic Research 9712 Medical Center Dr., Rockville, MD 20850, USA Tel: 301 838 0200 Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                              190 ttctagagctgcgcagtacatgccggcggtcaggttgacgctccaca 236
                                                                                                                                                                                                                                                                                                                                                       319 GATCCAATCACCTCAGTCTGACCATGTGACTGAAGCTAGCCA 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mouse BAC End Sequences from Library RPCI-23
Unpublished (1999)
Untact: Shaying Zhao
Department of Eukaryotic Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
/clone="RPCI-23-343M24"
/clone_lib="RPCI-23"
/sex="Female"
   /clone_lib="RPCI-23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .521
                           /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AZ027551.1 GI:7102935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 521)
                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                             , DNA sequence.
AZ027551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                house mouse.
                                                                                                                                                                                           Similarity
                                                                                                                                 Ø
                                                                                                                              129
                                                                                                                                                                                                      87;
                                                                                                                                                                               Query Match
                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                          AZ027551/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                               70
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                C97983 C97983 Rice
A1064071 GH04331.5
A0092344 A0092344
BE871785 601448347
BF312933 601896391
AL249964 Tetracdon
AA361086 EST70082
AA361196 EST70082
                                                                                                                                                                                                                                        AW927591 945006D06
AU162975 AU162975
ALO68702 mgae0003d
BF68554 602140603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zhao,S., Nierman,W., Feldblyum,T., Malek,J., Shatsman,S., Akinret
,B., Levins,M., Mcgann,S., Tsegaye,G., Geer,K., Krol,M., de Jong,P.
and Fraser,C.M.
                        AA880435 vw89f07.r
AW318852 un08d12.y
                                                               BF143984 601791238
BE228410 98AS2556
AI062250 GH01393.5
                                                                                                                                                                                                                                                                                                                                                                                                                  AZ261971 477 bp DNA GSS 26-JUL-2000
RPCI-23-123P23.TV RPCI-23 Mus musculus genomic clone RPCI-23-123P23
                                                                                                                                                                                                                 AU129052 AU129052
AW862698 945006D06
                                                                                                                                                                                                                                                                                          BE380347 601270411
                                                                                                                                                                                                                                                                                                      AW786287 119229 MA
BE907816 601501924
BE441993 925010B01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: Szhaofetigr.org
Clones are derived from the mouse BAC library RPCI-23. For BAC
Library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://bacpac.med.buffalo.edu/orderingframe.htm)
or from Resea ch Genetics (info@resgen.com). BAC end page:
http://www.tigr.org/tdb/bac_ends/mouse/bac_end_intro.html
Seq prime: 173 row: P column: 23
                                                   AW475303 un64b04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentía; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 477)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mouse BAC End Sequences from Library RPCI-23 Unpublished (1999)
Unpublished (1999)
Cother_GSSs: RRCI-23-123923.TJ
Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research 9712 Medical Center Dr., Rockville, MD 20850, USA Fax: 301 838 0200
                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="RPCI-23-123P23"
                                                                          BE228410
AI062250
                                                                                                                                                                                                                                                                                                      AW786287
BE907816
                                                                                                                                      BE871785
BF312933
                                                                                                                                                                                                                                                      AU162975
                                                               BF143984
                                                                                                                                                                CNS03LV7
                                                                                                                                                                                                                 AU129052
                                                                                                                                                                                                                                                                             BF685554
                                                                                                                                                                           6 AA360834
6 AA361196
                                                                                                                                                                                        AA361196
                                                                                                                                                                                                  W80370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A2261971.1 GI:9470858
                                                                                                                                                                                                    158
                                                                                                                                                                                                                           121
121
107
                                     700
712
1056
462
                                                                                                             Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       house mouse.
 AZ261971
source
                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
AZ261971/C
                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
 0 0 0 0 0 0 0 0 0 0 0 0 0 0
                                                                                                                                                                                                               υυυ
```

```
sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89
                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                          RESULT 4
BE357229/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                  g
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                 ð
                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ОD
                                                                   selected DNA was cloned into the pBACe3.6 vector at the ECORI sites. The ligation products were transformed into DH10B electrocompetent cells (BRL Life Technologies). " 136 c 124 g 124 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Sorghum bicolor"
/db_xref="taxon:4588"
/clone_lib="water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld; Vector: Lambda Zap; Site_1: Xho1;
Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sorghum bicolor
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
                 /note="Organ: Kidney/Brain; Vector: pBACe3.6; Site_1: EcoR1; Site_2: EcoR1; Female C57BL/6J mouse kidney and/or brain genomic DNA was isolated and partially digested with a combination of EcoR1 and EcoR1 Methylase. Size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Andropogoneae; Sorghum.
1 (bases 1 to 277)
Cordonnier-Pratt,M.-M., Gingle,A., Marsala,C., Sudman,M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE593226 277 bp mRNA EST 18-AUG-2000 WS1_99_B03.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence. BE593226
                                                                                                                                                                                                                                                                                                  aattttggtgtctcggctgcgttcactggaaatccctgccgcggggcttttgagagcacag 129
                                                                                                                                                                                                                                                                                                                          tgctttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgatcagaga 189
                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GA 30602-7271,
                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                       11.8%; Score 39; DB 215; Length 521;
Llarity 52.1%; Pred. No. 0.67;
Conservative 0; Mismatches 80; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An EST database from Sorghum: water-stressed plants.
Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                               190 ttctagagctgcggcagtacatgccggcggtcaggttgacgctccaca 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323 GATCCAATCACCTCAGTCCAGTCTGACCTGAAGCTAGCCA 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The University of Georgia
Plant Sciences Building, Rm. 2502, Athens,
TTE1: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence start: 5
High quality sequence stop: 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
Sequences have been trimmed
below Phred quality 16. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BE593226.1 GI:9848299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: PolyTMix
                                                                                                                                                                                                                                           Similarity
                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is 20.
                                                                                                                                                                                                                                                            87;
                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                  COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE593226/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                          130
                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                BASE
                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Spermatophyta;
de; Panicoideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryotta; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 537)
Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhoI; Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE357229 537 bp mRNA EST 20-JUL-2000
DG1_147_B02.91_A002 Dark Grown 1 (DG1) Sorghum bicolor CDNA, mRNA
                                                                                                          166 gcagtcggagacattgatcagagattctagagctgcgcagtacatgccggcggtcaggtt 225
                                                                                                                                                                                                            226 gacgotocacaccatgotgccgttgcagagggatgcctgattotgggtgatgttgaccag 285
                                                                                                                                                        163 GCTGTAGAAGCTAAAGATCAGACATCACACGTAGCCGCCGTTGGCGCGGGATGACCTGGCC 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166 gcagtcggagacattgatcagagattctagagctgcgcagtacatgccggcggtcaggtt 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390 GCTGTAGAAGCTAAAGATCAGACATCACACGTAGCCGCCGTTGGCGGGGTGACCTGGCC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 226 gacgctccacaccatgctgccgttgcagagggatgcctgattctgggtgatgttgaccag 285
                                                      Gaps
                                                                                                                                                                                                                                                                  44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2502, Athens, GA 30602-7271, USA
                                                                                                                                                                                                                                                               103 GTTGACCCACTCGGCGGCGTCGGTGCAGGAACCCGACCACCGGCGCGATGTCGCCGGG
                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
  Length 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      An EST database from Sorghum: dark-grown seedlings
Unpublished (2000)
Contact: Cordonnier-Fratt MM
Department of Botany
                                                   66; Indels
Score 36.4; DB 137;
Pred. No. 3.3;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 36.4; DI
Pred. No. 3.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: PolyTMix
High quality sequence start: 31
High quality sequence stop: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The University of Georgia
Plant Sciences Building, Rm.
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                   286 ctcctcaatgagctccttgagg 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:9298786
11.0%;
53.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.0%;
llarity 53.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                    43 CTCCCCGAGCCTCTCCATGGGG
                        Local Similarity 53.5
les 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 76; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE357229
BE357229.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLYA=NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE357229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
```

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                          LOCUS
                                        BF039993/c
                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                ACCESSION
                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="NIH_MGC_93"
/tissue_type="transitional cell papilloma, cell line"
/tissue_type="transitional cell papilloma, cell line"
/tab_most="DHIOB (phage-resistent)
/note="Organ: bladder; Vector: pCWV-SPORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Inli-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC_Library."
                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue procurement: ATCC

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov. f column: 08

High quality sequence stop: 736.

Location/Qualifiers

1. 757
                                                                                                                                                                                    BG260311 757 bp mRNA EST 13-FEB-2001
602371427F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4479367 5'
497 TCAAGTITCCTGGCCGCCAGAAGATCCACATCTCAAAGAAGTGGGGGCTTCACCAAGTTCA 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63 tcacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgag 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 757)
NIH-MGC http://mgc.ncl.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 557 ATGCTGATGAATTTGAAGACATGGTGGCTGAAAAGCGGCTCATCCCAGATGGCTTGTGGG
                                                                                                                                                                                                                                                                                                                   Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10.7%; Score 35.2; DB 174; Length 757; 49.0%; Pred. No. 9.5; ive 0; Mismatches 98; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9606"
/clone="IMAGE:4479367"
                                                                         270 CTCCCCGAGCCTCTCCATGGGG 249
                                                    286 ctcctcaatgagctccttgagg 307
                                                                                                                                                                                                                                                                BG260311.1 GI:12770127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 49.0
nes 94; Conservative
                                                                                                                                                                                                                           mRNA sequence.
BG260311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAGGGCTTCCA 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tcagagattcta 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186 a
                                                                                                                                                                                                                                                                                                     uman.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   677
                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183
                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                 RESULT
BG260311
                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                 g
                                                    ô
                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
```

```
Funding for cattle EST sequencing was provided by the USDA National Research Initiative, Animal Genome Resource Grant AG 99-3205-8534 for H. A. Lewin and J. E. Womack. Base Calling/Quality Scores: PHRED from Washington University Genome Center. Vector Trimmi g: Cross_match from Washington University Genome Center PHRAP suite. This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                    Lewin, H.A., Soares, M.B., Rebeiz, M., Pardinas, J., Liu, L. and Larson
                                                                                                                                                                                                                                                                                                                                                                                                                           Bovine ESTS
Unpublished (2000)
Contact: Lewin, H. A.
W. M. Keck. Center for Comparative and Functional Genomics
University of Illinois at Urbana-Champaign
340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana, IL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Organ: placenta; Vector: pT7T3Pac; Site_1: EcoRI; Site_2: NotI; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. " 3 others
EST 10-OCT-2000 clone BP250023B10D12 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134 ttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgatcagagattct 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGGAGCGGTCGTCCTCCAGGATGATGGCCAGGTGCTCACTGAACTCCATCAGCTTGCGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285 TICTGCTTCAGCTTGGCCTTGTAGANCTCGGCGAAGCGCCCCTTGCCCACCAGGGTGTCC 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  254 agggatgcctgattctgggtgatgttgaccagctcctcaatgagctccttgagggttggg 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194 agagetgegeagtacatgeeggeggteaggttgaegeteeacaceatgetgeegttgeag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9913"
/clone="BP250023B10012"
/clone_lib="Soares normalized bovine placenta"
,/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.4%; Score 34.4; DB 143; Length 462; 49.2%; Pred. No. 14; ive 0; Mismatches 92; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BACKWARD: ATTAACCCTCACTAAAG
Insert Length: 462 Std Error: 0.00
Plate: BP250023B10 row: D column: 12
Seq primer: AGCGGATAACAATTTCACACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop: 462
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FORWARD: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B"
                                                                                                                               GI:10757048
                                                                                                                                                                                                                                                                                                                                     (bases 1 to 462)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 217 333 5998
Fax: 217 244 5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .462
                                                                                                                               BF039993.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                        Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61801,
```

Casas, E.,

RESULT 7 BE705147/c LOCUS

105

Ω ð

DEFINITION

ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

REFERENCE AUTHORS JOURNAL

COMMENT

TITLE

```
Email: Smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
PCR PRIMERS
FORWARD: AGGAAACAGGTATGACCAT
                                                                                              Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pig. Sus scrofa Eukazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Bukaryota; Metazoa; Chordata; Craniata; Suina; Suidae; Sus. 1 (bases 1 to 546) Eathrenkrug/S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E. Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreld,W.W.
1 (bases I to 535)
Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Sus scrofa"
/db_xref="taxon:9823"
/clos_lib="MARC 1PIG"
/tissue_type="pooled"
/lab_host="DHIOB"
/note="Vector: pCMV SPORT6; Site_1: XbaI: Site_2: XhoI: Library made from pooled tissue from day 11, 13, 15, 20, and 30 embryos."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Design and use of two pooled tissue normalized cDNA libraries for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      209 atgccggcggtcaggttgacgctccacaccatgctgccgttgcagagggatgcctgattc 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE032543 546 bp mRNA EST 0
131942 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53; Indels
                                                                                                                                                                        Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TPL: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
T=D: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 34.2; 1
Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                   BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 168 g
                                                                                                                                                                                                                                                                                                                                                                                                                                     Plate: 63 row: E column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and 30 embryos.
151 c 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE032543
BE032543.1 GI:8327552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 9
BE032543/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                      REFERENCE
                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                           TITLE
                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="leaf, crown"
/dev_stage="seedling three-leaf stage"
/dev_stage="seedling three-leaf stage"
/note="vector: Bluescript SK+/Xhb1-EcoRI; Site_1: Eco RI;
/note="vector: Bluescript SK+/Xhb1 seedlings treated for
one week at 2cc, 12 hrs light/day. Library made with
Strategene UNIZAP XR Kit/(not packaged). cDNA is directly
ligated into SK+/Xho1-EcoRI, then electroporated into
170PlO cells (invitrogen)."
169 c 148 g 65 t 10 others
                                                                                                                                                                                                                                                                                                                                                                                                          Singh, JA., Piche, C., Couroux, P., De Moors, A., Harris, L.J., Hattori, J.I., Ouellet, T., Robert, L.S., Sprott, D. and Tinker, N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seed1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pig.
Sus scrofa
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                             SCO2_08f05_A SCO2_AAFC_ECORC_cold_stressed_winter_rye_seedlings Secale cereale cDNA clone ScO2_08f05, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Singh,J.A.
Eastern Cereal and Oilseed Research Centre
Agriculture and Agri-food Canada
960 Carling Avenue, Bldg. 20, Ottawa, Ontario, KlA 0C6, Canada
Tel: (613) 759-1662
Fax: (613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BEG32541 535 bp mRNA EST 0
131940 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BEG32541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4; Mismatches 41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             206 CGCCTGCTCGGTGGGGYTYTTGTYGGTGCTGCACGGCGT 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 34.4; DB 138;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cultivar="Puma (winter rye)"
/db_xref="taxon:4550"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Secale cereale"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: .singhja@em.agr.ca.
Location/Qualifiers
1. .507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="Sc02_08f05
                                                                                                                                                                                                                                BE705147.1 GI:10093412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:8327550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10.4%;
55.9%;
                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 507)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57; Conservative
                                                                                                                                                                                                                                                                                                     Secale cereale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE032541.1
                                        G 105
314 9 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
```

source

FEATURES

BASE COUNT

Matches

g ò

ŝ g

ö

Gaps

ö

Casas, E.,

RESULT 8 BE032541/c

DEFINITION

LOCUS

ACCESSION KEYWORDS SOURCE

VERSION

ORGANISM

09-JUL-2000

```
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                          LOCUS
                                            BF039993/c
                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                    ACCESSION
                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="transitional cell papilloma, cell line"
/tlsb.host="DH10B (phage-resistant)"
/note="longan: bladder; vector: pcMv-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10311 row: f column: 08
High quality sequence stop: 736.
Location/Qualifiers
1. 757
                                                                                                                                                                                            BG260311 757 bp mRNA EST 13-FEB-2001 602371427F1 NIH_MGC_93 Homo saplens cDNA clone IMAGE:4479367 5'
497 TCAAGTTTCCTGGCCGCCAGAAGATCCACATCTCAAAGAAGTGGGGCTTCACCAAGTTCA 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63 tcacttcaattttggtgtctcggctgcgttcactggaaatccctgccgcgggcttttgag 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        557 ATGCTGATGAATTTGAAGACATGGTGGCTGAAAAGCGGCTCATCCCAGATGGCTTGTGGG 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123 agcacagigciticagcatectetgggieettiggaiggegetgeagieggagaeatiga 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  617 GTCAAAGTACATACCCCAGTGGGCCCTCTGGACAAAGTGGCGGGCCTGGCACTCA 676
                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 757)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 tgaaatttccatggcgataaactccccttacataggtgagcaggtttttcaccaactgga 62
                                                                                                                                                                                                                                                                                                                               Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutelec
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 757)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10.7%; Score 35.2; DB 174; Length 757; 49.0%; Pred. No. 9.5; ive 0; Mismatches 98; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4479367"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_11b="NIH_MGC_93"
                                                    Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                         BG260311.1 GI:12770127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 49.0
Matches 94; Conservative
                                                                                                                                                                                                                                   mRNA sequence.
BG260311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGGGCTTCCA 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcagagattcta 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              677
                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
                                                                                                                                                                          BG260311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                    g
                                                        à
                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
Funding for cattle EST sequencing was provided by the USDA National Research Initiative, Animal Genome Resource Grant AG 99-3205-8534 for H. A. Lewin and J. E. Womack. Base Calling/Quality Scores: PHRED from Washington University Genome Center. Vector Trimmi g: Cross_match from Washington University Genome Center PHRAP suite. This sequence is vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                       Lewin, H.A., Soares, M.B., Rebeiz, M., Pardinas, J., Liu, L. and Larson
                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
Bovidae, Bovinae, Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: placenta; Vector: pT7T3Pac; Site_1: EcoRI; Site_2: Not1; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. " 3 others
         EST 10-OCT-2000
placenta Bos taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovine ESTS
Unpublished (2000)
Contact: Lewin, H. A.
W. M. Keck Center for Comparative and Functional Genomics
University of Illinois at Urbana-Champaign
340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Urbana,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         254 agggatgcctgattctgggtgatgttgaccagctcctcaatgagctccttgagggttggg 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGGAGCGGTCGTCCTCCAGGATGATGGCCAGGTGCTCACTGAACTCCATCAGCTTGCGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134 ttcagcatcctctgggtcctttggatggcgctgcagtcggagacattgatcagagattct 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             285 TTCTGCTTCAGCTTGGCCTTGTAGANCTCGGCGAAGCGCCCCTTGCCCACCAGGGTGTCC 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194 agagetgegeagtacatgeeggeggteaggttgaegeteceacaceatgetgeegttgeag 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           225 AGCTCGATGGGCAGCAGCTCCGTGTTGTGGTTGATGTTGTTGCGCGCAGGTGGAGCTGATG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9913"
/clone="BP250023B10D12"
/clone_11b="Soares normalized bovine placenta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10.4%; Score 34.4; DB 143; Length 462; 49.2%; Pred. No. 14; Live 0; Mismatches 92; Indels 0;
BF039993 462 bp mRNA
BP250023B10D12 Soares normalized bovine
clone BP250023B10D12 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Insert Length: 462 Std Error: 0.00 Plate: BP250023B10 row: D column: 12 Seq primer: AGCGGATAACAATTTCACACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     High quality sequence stop: 462.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .462
/organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FORWARD: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACKWARD: ATTAACCCTCACTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B"
                                                                                                                                      GI:10757048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , /sex="female"
                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 462)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 217 333 5998
Fax: 217 244 5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                      BF039993.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
```

DEFINITION

ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

REFERENCE AUTHORS

JOURNAL

TITLE COMMENT FEATURES

BE705147/c

ò q

```
Figure 1: Smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore 18
and -minmatch 12 options.
PCR PRimers
FORWARD: AGGARACAGCTATGACCAT
           1 (bases 1 to 535)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E
Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W.
                                                                                          Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.

1 (bases 1 to 546)
Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E. Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Sus scrofa"
/db_xref="taxon:9823"
/clone_lib="MARC 1PIG"
/tissue_lip=="pooled"
/lab_host="poiled"
/note="Vector: pCMV SPORT6; Site_l: XbaI: Site_2: XhoI:
Library made from pooled tissue from day 11, 13, 15, 20, and 30 embryos."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Design and use of two pooled tissue normalized cDNA libraries for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        209 atgccggcggtcaggttgacgctccacaccatgctgccgttgcagagggatgcctgattc 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285 TGGGCCACGGTGATGCTCTTCTCATTGCCCTTGTAGACCGTGGTGGTCACAGG 227
    Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE032543 546 bp mRNA EST
131942 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53; Indels
                                                                                                                                                                                                    USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
TEL: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST discovery in swine Unpublished (2000)
Unpublished (2000)
Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA T=1: 402 762 4396
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 34.2; I
Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seq primer: ATTTAGGTGACACTATAG.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: GTTTTCCCAGTCACGACG Plate: 63 row: E column: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and 30 embryos.
151 c 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE032543
BE032543.1 GI:8327552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10.4%;
                                                                                                                                                                                    Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pig.
Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE032543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
BE032543/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                         REFERENCE
                                                                                                                                                           JOURNAL
                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                 TITLE
                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="leaf, crown"
/dev_stage="seedling three-leaf stage"
/dev_stage="seedling three-leaf stage"
/note="vector: Bluescript SKH/Xhbi-EcoRI; Site_1: Eco RI;
/note="vector: Bluescript SKH/Xhbi-EcoRI;
one week at 2cc, 12 hrs light/day. Library made with
Stratagene UNIZAP XR Kit/(not packaged). CDNA is directly
ligated into SKH/Xhoi-EcoRI, then electroporated into
TOPID cells (Invitrogen)."
10910 cells (Invitrogen)."
                                                                                                                                                                                                                                                                                                                                                                                                                           Singh, J.A., Piche, C., Couroux, P., De Moors, A., Harris, L.J., Hattori, J.I., Ouellet, T., Robert, L.S., Sprott, D. and Tinker, N.A.
Expressed Sequence Tags from Cold-Stressed Winter Rye Seedlings Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="Sc02_AAFC_ECORC_cold_stressed_winter_rye_seedl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pig.
Sus scrofa
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                 BE705147 507 bp mRNA EST 12-SEP-2000 SC02_08f05_A SC02_AAFC_ECORC_cold_stressed_winter_rye_seedlings BE70147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Singh,J.A. Essearch Centre Esstern Cercal and Oilseed Research Centre Agriculture and Agri-food Canada 960 Cariling Avenue, Bldg. 20, Ottawa, Ontario, KIA 0C6, Canada Tel: (613) 759-1662 Fax: (613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     220 caggitgacgetecacaeceigetgeegttgeagagggatgeetgattetgggtgatgit 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE032541 535 bp mRNA EST 0
3131940 MARC 1PIG Sus scrofa cDNA 5', mRNA sequence.
BE032541.1 GI:8327550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Mismatches 41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      206 CGCCTGCTCGCTGGGGGYTYTTGTYGCTGCTGCACGCGT 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 34.4; DB 138;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cultivar="Puma (winter_rye)"
/db_xref="taxon:4550"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Secale cereale"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: singhja@em.agr.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="Sc02_08f05"
                                                                                                                                                                                                                                            BE705147.1 GI:10093412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 507)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57; Conservative
                                                                                                                                                                                                                                                                                                                   Secale cereale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          115
                                         105 G 105
314 g 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
BE032541/c
```

BASE COUNT

Matches

ΩD

qq ô

ö

Gaps

; 0

Casas, E.,

DEFINITION

LOCUS

ACCESSION VERSION

ORGANISM

KEYWORDS SOURCE

09-JUL-2000

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AZ201624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
Single pass sequencing. Bases called and alt_trimmed with phred v0.9809044.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.

PCR PRIMERS
FORWARD: AGGAAACAGGTATGACCAT
BACKWARD: GTTTTCCCAGTCACGG
BACKWARD: GTTTTCCAGTCACGG
BACKWARD: GTTTTCCAGTCACGTCACGG
Seq primer: ATTTAGGTGACCATATAGG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AI746678 570 bp mRNA EST 22-JUN-1999 ul06b05.yl Sugano mouse kidney mkia Mus musculus cDNA clone IMAGE:2065233 5' similar to 9b:D00015 MAJOR PRION PROTEIN PRECURSOR (HUMAN); 9b:M13685 Mouse prion protein (MOUSE); "mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 570)
Marra,M., Hillier,L., Kucaba,T., Martin,J., Beck,C., Wylie,T., Underwood,K., Steptoe,M., Theising,B., Allen,M., Bowers,Y., Person,B., Swaller,T., Gibbons,M., Pape,D., Harvey,N., Schurk,R., Ritter-Ker, Kohn,S., Shin,T., Jackson,Y., Cardenas,M., McCann,R., The Washu-NCI Mouse EST Project 1999
Contact: Marra M/Washu-NCI Mouse EST Project 1999
                                                                                                                                                                                                                                                                                                   /note="Vector: pCMV SPORT6; Site_1: Xba1, Site_2: Xho1, Library made from pooled tissue from day 11, 13, 15, 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL ; contact the
IMAGE Consortlum (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            209 atgccggcggtcaggttgacgctccacaccatgctgccgttgcagagggatgcctgattc 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA Fax: 314 286 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 546;
                                                                                                                                                                                                                                                                                                                                                              2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 34.2; DB 161;
Pred. No. 17;
0; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                              ų
                                                                                                                                                                                                                                                                                                                                                            98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Mus musculus"
/strain="C57BL"
/db_xref="taxon:10090"
/clone="IMAGE:2065233"
                                                                                                                                                                                               /organism="Sus scrofa"
/db_xref="taxon:9823"
/clone_lib="MARC lPIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: custom primer used High quality sequence stop: 283,
                                                                                                                                                                                                                                                          /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 2
Location/Qualifiers
                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                        169 g
                                                                                                                                                                                                                                                                                                                                            embryos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AI746678.1 GI:5124942
                                                                                                                                                                                                                                                                                                                                                                                                                                        ch 10.4%;
1 Similarity 55.5%;
66; Conservative
                                                                                                                                                                                                                                                                                                                                          and 30 emb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  house mouse.
                                                                                                                                                                                                                                                                                                                                                            125
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
AI746678/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
```

g

g ò

```
/ncte="Occurs in the content of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strongylocentrotus purpuratus
Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinoidea; Euechinoidea; Echinodea; Echinoida;
Strongylocentrotidae; Strongylocentrotus.

[ bases 1 to 965)
Cameron, R.A., Mahairas, G., Rast, J.P., Martinez, P., Biondi, T.R.,
Swartzell, S., Wallace, J.C., Poustka, A.J., Livingston, B.T., Wray,
G.A., Ettensohn, C.A., Lehrach, H., Britten, R.J, Davidson, E.H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SP_0053_A2_B12_SP6E_Strongylocentrotus purpuratus, purple sea
urchin, sperm genomic BAC library Strongylocentrotus purpuratus
genomic clone Plate=53 Col=24 Row=C, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195 gagetgegeagtacatgeeggeggteaggttgaegeteeacaceatgetgeegttgeaga 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     491 GCGCINCATCATTCTTCACATCGGTCGAGGTCTTCTCCCCTTTGGTGGTGGTGGTGA 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255 gggatgcctgattctgggtgatgttgaccagctcctcaatgagctccttgagggttgggg 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A sea urchin genome project: Sequence scan, virtual map, and additional resources
Proc. Natl. Acad. Sci. U. S. A. 97 (17), 9514-9518 (2000)
20402566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.4%; Score 34.2; DB 24; Length 570; 52.9%; Pred. No. 17;
tive 0; Mismatches 64; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 others
/clone_lib="Sugano mouse kidney mkia"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hood, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Cameron, RA, Davidson, EH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Division of Biology 156-29
California Institute of Technology
Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strongylocentrotus purpuratus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plate: 53 row: C column: 24
Seq primer: SP6
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop: 9
Location/Qualifiers
                                                                                                /dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acameron@caltech.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AZ201624.1 GI:8396538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: (626) 395-8421
Fax: (626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               371 ACTGATCCACTGGCCT 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 52.3
Matches 72; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             315 agggagtcacagggct 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hood, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
```

œ

```
1587 RSYSSYSCKRCKWYKKTGSTSMKSAGGWGRWRARAARWWYSWSMRRASARWMRMYRMWG 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                           RESULT 13
BE363650/c
                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
BE361027/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rocus
                                                             g
                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                    ö
                                                                                           Clones in E-Coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1647 WWWWAMAAYWAWWAARAAKAWYAKSWKRWWAAWWAWGAWSRYRRYMAKCRGCSKSGWRCW 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF034173 2275 bp mRNA EST 30-MAR-1998 AF034173 Human mRNA (Tripodis and Ragoussis) Homo sapiens cDNA clone ntcon2 contig, mRNA sequence.
                                                              purpuratus, purple sea
                                                                                                                                                                                                                                                  acattgatcagagattctagagctgcggcagtacatgccggcggtcaggttgacgctccac 235
                                                                                                                                                                                                                                                                          623 ACCCTGAGAGGTACTTTAGGATCTGAGCCCTCTACGTTCACGTTGCTGTTGCCGCTGACA 682
                                                                                                                                                                                                                                                                                                               295
                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19 ataaactccccttacataggtgagcaggttttcaccaactggatcacttcaattttggt 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleost Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 2275) Tripodis, N. and Ragoussis, J. Generation of a transcription map in the region immediately centromeric to human MHC across the 6p21.2-6p21.3 chromosomal
                                                                                                                                                                                                                                                                                                            236 accatgotgocgttgcagagggatgcotgattotgggtgatgttgaccagotoctcaatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="ntcon2 contig"
/clone_lib="Human mRNA (Tripodis and Ragoussis)"
619 c 470 g 599 t 149 others
                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                     DB 217; Length 965;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14; Length 2275;
         /organism="Strongylocentrotus purpuratus"
/db_xref="taxon:7668"
/clone="Plate=53 Col=24 Row=C"
/clone_lib="Strongylocentrotus purpuratus,
urchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC
DH10B"
                                                                                                                          2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                  63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Tripodis, Nikos
Division of Medical and Molecular Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                  10.4%; Score 34.2; D
llarity 53.3%; Pred. No. 20;
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Guys Hospital
7th floor, Guy's Tower, London SE1 9
Email: nikos@nki.nl.
Location/Qualifiers
e /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="6p21.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10.4%; Score 34.2;
12.0%; Pred. No. 25;
                                                                                                                        184 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        470 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF034173.1 GI:2707735
                                                                                                                        178 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                         296 agctccttgagggtt 310
                                                                                                                                                                                                                                                                                                                                                                                                      743 GTGCCCTTCAAAGAT 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         boundary
                                                                                                                          304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                   Query Match
Best Local S.
Matches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Si
Matches 21;
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF034173/C
                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                               쉄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
/organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Water-stressed 1 (WS1)"
/note="Organ: Mix of 5-week old plants on days 7 & 8 after water was withheld; Vector: Lambda Zap; Site_1: Xho1; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZaP II. Clones to be sequenced were prepared by mass excision.

a 110 c 130 g 54 t
                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 370)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE361027 562 bp mRNA EST 20-JUL-2000
DG1_69_A02.b1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mRNA
sequence.
                                                                                                                                                                                         BE363650 370 bp mRNA EST 20-JUL-2000 WS1_64_G10.91_A002 Water-stressed 1 (WS1) Sorghum bicolor cDNA, mRNA sequence.
BE363650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205 gtacatgccggcggtcaggttgacgctccacaccatgctgccgttgcagagggatgcctg 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Cordonnier-Pratt MM
Contact: Cordonnier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tal: 706 542 1865
                                 1527 MMKCYKWWRRWGTKKTGKTKKKTYRKYMRKCAKYMYYCMYYWWYMKYWKTTTT 1473
139 catcctctgggtcctttggatggcgctgcagtcggagacattgatcagagattct 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        265 attctgggtgatgttgaccagctcctcaatgagctccttgagggttggggaggg 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ,L.H.
An EST database from Sorghum: water-stressed plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 34; DB 1
Pred. No. 18;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: PolyTMix
High quality sequence start: 32
High quality sequence stop: 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                    BE363650.1 GI:9305207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE361027
BE361027.1 GI:9302584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10.3%;
illarity 56.1%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                     Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 64; Conserv
                                                                                                                                                                                                                                                                                                                                                            sorghum.
```

ö

```
Search completed: May 13, 2001, 11:41:00 Job time: 16535 sec
                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                   Sorghum.
Sorghum blcolor.
Sorghum blcolor.
Bukaryota, Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoldeae
Andropogoneae; Sorghum.
1 (bases 1 to 562)
Cordonnier-Pratt, M.- M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                    The University of Georgia Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA Tel: 706 542 1860
Fax: 706 542 1805
Fax: 706 542 1805
Email: mmpratt@uga.edu
Sequences have been trinmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:4558"
/clone_lib="bark Grown 1 (DG1)"
/note="Organ: 5-day-old dark grown seedlings; Vector:
/note="Organ: 5-day-old dark grown seedlings; Vector:
Lambda zap; Site_l: xhol; Site_2: EcoRI; The library was
made from poly-A RNA in the cloning vector lambda zAP II.
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE127683 341 bp mRNA EST 15-JUN-2000
DEPA1432 Rat Lambda ZAP Express Library Rattus norvegicus CDNA 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 341)
Sleeman,M.A., Murison,J.G., Strachan,L., Kumble,K.D., Glenn,M.P., McGrath,A., Grierson,A., Havukkala,I., Tan,P.L.J. and Watson,J.D. Expressed sequence tags of cDNA clones from rat dermal papilla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       205 gtacatgccggcggtcaggttgacgctccacatgctgccgttgcagagggatgcctg 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     284 GTCCATGGCAGCGGCGCGTCCTCGCGCTCAAGGAAGGTGACGAAGCCGAAGGAGCGGTG 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              224 CTTCTGCGTGGACTGGTCCAGCGGCGTCTTGACGTCCTTGACCTCGCGAAGGG 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biology
Genesis Research and Development Corporation Limited
P.O. Box 50, 1 Fox St, Parnell, Auckland, New Zealand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265 attctgggtgatgttgaccagctcctcaatgagctccttgagggttggggaggg
                                                                                                                                                                                       ,L.H.
An EST database from Sorghum: dark-grown seedlings (popublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ch 10.3%; Score 34; DB 166; Similarity 56.1%; Pred. No. 20; 64; Conservative 0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is 20.
Seq primer: JEN REV
High quality sequence stop: 560
POLYA•No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE127683.1 GI:8550422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Sleeman MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BE127683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Norway rat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
BE127683/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                           ORGANISM
                                                                                                                                                                                                           TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                         REFERENCE
                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
213 eggeggteaggttgaegeteeacaceatgetgeegttgeagagggatgeetgattetggg 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281 CGNCGGTCTCCGTGAAGTTCTCCCCCTTGGTGGTGGTGACTGTATGCTGCTTGATGG 222
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      273 tgatgitgaccagciccicaatgagciccitgagggitggggagggagicacagggci 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .<u>`</u>
                                                                                                                                                                                                                                                                                                                                                            DB 163; Length 341;
                                                                                                                                                                                     /db_xref="taxon:10116"
/clone_lib="Rat Lambda ZAP Express Library"
/tissue_type="vibrissae"
/cell_type="dermal papilla"
88 c 105 g 58 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                  53;
                                                                                                                                               /organism="Rattus norvegicus"
/strain="Dark-Agouti"
                                                                                                                                                                                                                                                                                                                                                          Score 33.8; DE
Pred. No. 20;
0; Mismatches
Tel: 0064 9 373 5600
Fax: 0064 9 373 2189
Email: m.sleeman@genesis.co.nz
Seq primer: T3 forward
High quality sequence stop: 341.
Location/Qualifiers
e
                                                                                                                                                                                                                                                                                                                                                          10.2%;
55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 65; Conserv
```

ó

```
May 13, 2001, 14:22:00 ; Search time 79.9 Seconds (without alignments) 93.722 Million cell updates/sec
                                                                                                                                                                                                                                                                                              US-09-451-527-92
663
1 MALWLIVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn1_8/gcgdata/geneseq/yeneseqp/An1999.DAT:*/cgn1_8/gcgdata/geneseqp/An2000.DAT:*/cgn1_8/gcgdata/geneseq/geneseqp/An2000.DAT:*/cgn1_8/gcgdata/geneseq/geneseqp/An2000.DAT:*/cgn1_8/gcgdata/geneseq/geneseqp/An2000.DAT:*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn1_8/gcgdata/geneseq/geneseqp/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgnl_8/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/cgnl_8/gcgdata/geneseq/geneseqp/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn1_8/gcgdata/geneseq/geneseqp/AA1996.DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgnl_8/gcgdata/geneseg/genesegp/AA1982.DAT:*/cgnl_8/gcgdata/geneseg/genesegp/AA1983.DAT:*/cgnl_8/gcgdata/geneseg/genesegp/AA1984.DAT:*/cgnl_8/gcgdata/geneseg/genesegp/AA1984.DAT:*/cgnl_8/gcgdata/geneseg/genesegp/AA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gcgdata/geneseq/geneseqp/AA1994.DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gcgdata/geneseq/geneseqp/AA1993.DAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      390729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn1_8/gcgdata/geneseq/geneseqp/AA1989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn1_8/gcgdata/geneseq/geneseqp/AA1991
/cgn1_8/gcgdata/geneseq/geneseqp/AA1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn1_8/gcgdata/geneseg/genesegp/AA1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cgn1_8/gcgdata/geneseq/geneseqp/AA1980.
/cgn1_8/gcgdata/geneseq/geneseqp/AA1981.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn1_8/gcgdata/geneseq/geneseqp/AA1997
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390729 seqs, 57163235 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A_Geneseq_0401:*
                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                   Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

|   | Description                | Canine interleukin | Canine interleukin | Canine mature inte | Canine mature inte | Sequence of human | Cytokine NC30, R | . Protein with cytok | Human interleukin- | Sequence of mouse | Protein with cytok | Human interleukin- |
|---|----------------------------|--------------------|--------------------|--------------------|--------------------|-------------------|------------------|----------------------|--------------------|-------------------|--------------------|--------------------|
|   | II                         |                    | Y58223             | Y58222             | Y58224             | R48624            | R27348           | R27347               | R92793             | R48625            | R27346             | R92794             |
|   | DB                         | 21                 | 21                 | 21                 | 21                 | 15                | 13               | 13                   | 17                 | 15                | 13                 | 17                 |
|   | Length                     | 131                | 130                | 111                | 110                | 132               | 146              | 112                  | 112                | 131               | 112                | 111                |
| æ | Query<br>Match Length DB I | 100.0              | 7.76               | 84.6               | 82.3               | 6.69              | 68.8             | 57.7                 | 57.7               | 57.1              | 56.6               | 55.4               |
|   | Score                      | 663                | 647.5              | 561                | 545.5              | 463.5             | 456.5            | 382.5                | 382.5              | 378.5             | 375.5              | 367                |
|   | Result<br>No.              | 1                  | 7                  | 9                  | 4                  | ۍ<br>د            | 9                | 7                    | 80                 | 0                 | 10                 | 11                 |

Claim 3i; Page 231; 264pp; English.

PS

| Murine P600. Mus Cytokine signal pe Cytokine signal pe Human secreted pro Gene 38 human secr TIP120. Rattus ra Human interleukin Recombinantly prod Placental derived Human platelet der Recombinantly prod Streptococcus pneu Arabidopsis thalia Amino acid sequenc Human secreted pro Drosophila mitofus Aquaricine I. Ther T. aquaticus Aquari Aqualysin I. Ther A human proliferat A human proliferat A human secreted pro HIV-1-NCT envelope Wheat sulfite redu Human secreted pro Human proliferation pro Aqualysin I. Ther A human proliferation pro Aqualysin I. Ther A human proliferation pro Human secreted pro   | GNMENTS  e 80. anine; inhibitor; immune response; autoimmune disease; vaccine.  rling RS; 5558. atory proteins from cats or dogs, e.g. tumors or autoimmune disease - |
|--|---|
| R92795<br>R273445<br>R273445<br>R383312<br>R492025<br>R492025<br>R492025<br>R492025<br>R491649<br>R492026<br>R81649<br>R94909<br>R13181<br>R13181<br>R3181<br>R3183<br>R31633<br>R31633<br>R31633<br>R31633<br>R31633<br>R31633<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R3163<br>R | A. I on lon cr;   |
| 111111111111111111111111111111111111111  | in; 131 A  try)  (IL-13) c antibody ur; cance 11942. 87306. 2 MJ, Wo immunore preventi  |
| 111<br>200<br>665<br>665<br>1230<br>1230<br>1230<br>1210<br>1230<br>1231<br>124<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | Proteil rst ent in-13 ( IL-13; ; tumous) ( IE-08 BUS-008 BUS-008 ERP. Dreitz //06. Z55556, zcoding ing or                         |
| 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | tandard; P: 000 (firs: nterleukin kin-13; IL gulation; " miliaris. 8-A2. 999; 99W 999; 99W 7ang S, D: 0-072623/00 255555, 255 acids encod or treating                 |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | 1<br>8221 s<br>8221;<br>-MAR-2<br>nine i<br>terleu<br>munore<br>nis fa<br>996161<br>-DEC-1<br>-DEC-1<br>-MAY-1<br>-MAY-1<br>I; 200<br>I; 200<br>PSDB;                 |
| 1144 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | RESULT Y \$28.21 I I D Y \$5 8.21 I I D Y \$5 8.21 I D Y \$5 8.21 I J D Y Y \$1 8.21 I J D Y Y Y Y Y Y Y Y D Y D Y D Y D Y D Y  |
|  |   |

```
ö
       Sequences V58221-V58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline Fit-3 ligand, canine or feline CD40, canine or feline CD40, canine or feline CD40, canine or feline CD40, canine or feline GD40, canine or feline GD40, and foline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                                                                                                                                          allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences or an also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acids encoding immunoregulatory proteins from cats or dogs, for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                              Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 663; DB 21;
100.0%; Pred. No. 5.6e-68;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Canine interleukin-13 (IL-13) clone 78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-072623/06.
N-PSDB; 255561, 255562, 255563, 255564.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y58223 standard; Protein; 130 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 131; Conservative
                                                                                                                                                                                                                                                                                                                                            and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 VRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 vrgvyrhgafr 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                            131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Y58223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \frac{1}{2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
```

```
ä
                                         Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine or feline Fil-13 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony stimulating factor (GMCSF), and nucleotides which encode these nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoinmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase
                                                                                                                                                                                                                                               the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides) The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MALWITVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97.7%; Score 647.5; DB 21; Length 130; 99.2%; Pred. No. 3.3e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                         .5; ...
3.3e-66;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine mature interleukin-13 (IL-13) clone 80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
               Claim 3i; Page 237; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Y58222
ID Y58222 standard; Protein; 111 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 99.2
Matches 130; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; Z55559, Z55560.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 VRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                     130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y5822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

Claim 3i; Page 240; 264pp; English.

```
Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (II-13) clones 80 and 78. The invention relates to canine interleukin-13 (II-13) clones 80 and 78. The invention relates to canine IL-4, canine Or feline CD40, canine or incleic matching for the CD55, and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulactors of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84.6%; Score 561; DB 21; Length 111;
100.0%; Pred. No. 2e-56;
Live 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine mature interleukin-13 (IL-13) clone 78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wonderling RS;
                                                          Claim 3i; Page 234; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84.0.,
100.0%; Pre
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Y58224 standard; Protein; 110 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; 255565, 255566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y58224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
```

```
Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline FIt-3 ligand, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21; Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zurawski G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; lymphokine; immunological disorder; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cooks BG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 545.5; DB 21; Length
Pred. No. 1.1e-54;
0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Banchereau J, Briere F, Coffman RL, Coo, Dang W, De Vries J, De Waal Malefyt R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence of human interleukin-13 (IL-13).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΑĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R48624 standard; Protein; 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92US-0933416.
93US-0010977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93WO-US07645.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93US-0012543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1994-083197/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 110; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; Q56692.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Culpepper, I
Doherty TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-AUG-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-JAN-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9404680-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnostic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aversa G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R48624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R48624
\mathbf{x} \otimes \mathbf{x} \cup 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

ή:

```
27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAR-1991;
08-JAN-1992;
                                                                                                                                                                                        93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                    EP506574-A
                                                                                                                                               Seguence
                                                                                                                                                                        Query Match
                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                            RESULT
R27347
 ò
                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                  GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                            1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                        An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                 20..21
/note= "putative signal peptide cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                   24. 25
/note= "putative signal peptide cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "putative signal peptide cleavage site"
35..146
Purified interleukin-13 proteins and antibodies - obtd, using mouse gene encoding related protein P600
                                                                                                                                             Length 132;
                                                                                                                                           ; Score 463.5; DB 15; Length
; Pred. No. 3.4e-45;
11; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                    32.33
/note= "putative signal peptide cleavage
                                                                                                                                                                                                                                                                                                                                                                                       Interleukin; chemotaxis; immunomodulation; inflammation
                          Claime 1; Page 126-127; 135pp; English
                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                 R27348 standard; Protein; 146 AA.
                                                                                                                                            69.98;
71.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35..146
/label= NC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                             94; Conservative
                                                                                                                                                                                                                                                     120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                               121 hlkklfregrf 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1992-325841/40.
N-PSDB; Q28947.
                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SNFI ) ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                      Cytokine NC30
                                                                                                                                                                                                                                                                                                                                                                                                                   cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                     cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                   cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cleavage_site
                                                                                                                                                                                                                                                                                                                                                    24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAR-1991;
08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EP506574-A
                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                   R27348;
                                                                                                                                                                                                                  09
                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                RESULT
R27348
ò
                                                                                                                                                                                                a
                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                    ò
```

```
60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                         A novel cytokine produced by T lymphocytes induced by phorbol-2-mayistate-3-acetate and phytohaemaglutinin was coded for by the sequence in clone pSEI-NC30. A second clone was also identified (pSEI-NC30bis) which differed only in the identity of codon 41. The corresponding proteins differ in the amino acid at position 41 which is either Asp (in NC30) or G1y (in NC30bis). The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bouteiller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 146;
New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Interleukin; chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kaghad M, Labit-le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68.9%; Score 456.5; DB 13; 71.0%; Pred. No. 2.4e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein with cytokine activity encoded by Nal'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                     Claim 1; Page 52-53; 78pp; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R27347 standard; Protein; 112 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Caput D, Ferrara P, Guillemot
Leplatois P, Magazin M, Minty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-FEB-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::: ::| | |
135 hlkklfregrf 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1992-325841/40.
N-PSDB; 028944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SNFI ) ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                  146 AA;
```

1;

S

ï

```
cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                                                                                                                                                                                                                                                                                   diagnostic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Aversa G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sednence
                                      Sequence
                                                                         Query Match
                                                                                                                                                                                                                                                                    R48625;
                                                                                                                                                                                                                       σ
                                                                                  Best_Loca
Matches
                                                                                                                    22
                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                   R48625
    SS \times S
                                                                                                                                       qq
                                                                                                                                                                 δλ
                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                   δ
                                                                                                                    ;
                                                                                                                   Gaps
                                                                                                                                                   Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural II-13 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytchine agonist activity, exhibit less than 80% maximal agonist activity of natural II-2, and/or antagonize cytchine activity by least about 50% when present at a 100-fold excess. They and other cytchine muteins (see also R92790-92, R92795-802) are useful in the screening of
                                                                                                                                       22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muteln(s) of human and murine cytokine(s), esp. interleukin(s) and murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
 at position 41 which is either Asp or Gly. The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions. See Q28941-Q28947.
                                                                                                                                                                                                                                                                                                                                                                                                                                           an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             an
                                                                                                                   ∺
                                                                                                                                                                                                                                                                                                                                                          mutein; interleukin-13; IL-13; agonist; antagonist;
; therapy; cancer; inflammation; degenerative disease.
                                                                                             DB 13; Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Glu at position 11 may be replaced by amidated amino acid, including Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Arg at position 64 may be replaced by acidic amino acid, including Asp"
                                                                                                                                                                                    81 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                ||||| | | :||| || ||||||| ||||||| :: ::| | | tqrmLsgfcphkvsagqfsslhvrdtkievaqfvkdlllhlkklfregrf 111
                                                                                                                  Indels
                                                                                                                  21;
                                                                                            Score 382.5; DB 1
Pred No. 4.7e-36;
                                                                                   57 7%; Sco. 70.0%; Pred. No. 4... 11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                                                R92793 standard; Protein; 112 AA
                                                                                                                                                                                                                                                                                                                                     Human interleukin-13 mutein 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95WO-US08950
                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                          Ouery Match
Best Local Similarity 70.0°
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1996-129335/13.
                                                          112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9604306-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-JUL-1995;
                                                                                                                                                                                                                                                                                                              24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zurawski G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                       diagnosis;
                                                                                                                                                                                                                                                                                                                                                          Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
                                                          Sequence
                                                                                                                                                                                                                                                                                       R92793;
                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                      R92793
ID R9
                                                                                                                                                                                                                                             RESULT
                                                                                                                                                            셤
                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                            8888888
                                                                                                                                                                                    ò
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                     PVTPSPTLKELIEELVNITQNQ-ASLCNGSMYWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                              digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; lymphokine; P600; immunological disorder; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 131;
                                                                           Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Purified interleukin-13 proteins and antibodies - obtd. using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zurawski G;
                                                                                                                                                                                                                                                                                           ||||| | | :||| | | |||||| | ||:|| ::::| | | tgrmlsgfcphkvsaggfsslhvrdtkievagfvkdlllhlkklfregrf 111
                                                                                                                                                                                                                                                                  81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cooks BG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Banchereau J, Briere F, Coffman RL, Cool
, Dang W, De Vries J, De Waal Malefyt R;
M, Heath A, Mckenzie A, Punnonen J, Zuri
                                                                      ; Score 382.5; DB 17;
; Pred. No. 4.7e-36;
11; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57.1%; Score 378.5; DB 15; 59.0%; Pred. No. 1.7e-35; tive 19; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 128-129; 135pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mouse gene encoding related protein P600
                                                                                                                                                                                                                                                                                                                                                                                                                                        R48625 standard; Protein; 131
                                                                      57.78;
70.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93WO-US07645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 57.1
Best Local Similarity 59.0
Matches 79; Conservative
                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence of mouse P600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1994-083197/10.
                                                                                            Local Similarity
nes 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131 AA;
112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; 056693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-AUG-1992;
29-JAN-1993;
01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Doherty TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-MAR-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9404680-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Culpepper,
```

ñ

an

an

ρλ

q

ρp ò

ò

```
Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-92, R92795-802) are useful in the screening of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mutein(s) of human and murine cytokine(s), esp. interleukin(s) and murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders
                                                                                                                                                Cytokine; mutein; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease.
                                                                                                                                                                                                                                                                                                                                     "Arg at position 64 may be replaced by acidic amino acid, including Asp"
                                                                                                                                                                                                                                                                               "Glu at position 11 may be replaced k amidated amino acid, including Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.4%; Score 367; DB 17; 69.1%; Pred. No. 2.8e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                            Location/Qualifiers
standard; Protein; 111 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
R92795
ID R92795 standard; Protein; 111 AA.
XX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                             Human interleukin-13 mutein 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94US-0284393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zurawski G, Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 69.1 nes 76; Conservative
                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                       /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1996-129335/13.
                                                                                                                                                                                                                                                                                                                     Misc-difference 64
                                                                                                                                                                                                                                                              Misc-difference 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111 AA;
                                                                                                                                                                                                                                                                                                                                                                                             WO9604306-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-JUL-1995;
                                                                       24 - MAY - 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                 15-FEB-1996,
                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                    R92794;
R92794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                            57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
               MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 pvppstalrelieelvnitqnqkaplcngsmvwsinltadmycaaleslinvsgcsaiek 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kaghad M, Labit-le Bouteiller C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 TORMLKALCSOKPAAGOISSERSRDTKIEVIOLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |||||| | | :||| || ||||||| ||||||| :::::| | |
tqrmlsgfcphkvsagqfsslhvrdtkievaqfvkdlllhlkklfregrf 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cytokine having immunomodulatory activity - useful for iting tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                               ·Interleukin; chemotaxis; immunomodulation; inflammation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 375.5; DB 13;
Pred. No. 3e-35;
1; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                           Protein with cytokine activity encoded by Nal
                                                                                                                                                                                                                                                                             R27346 standard; Protein; 112 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲, Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Caput D, Ferrara P, Guillemot
Leplatois P, Magazin M, Minty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                            117 LLTYVRGVYRHGNF 130
                                                                                                                                                                     ||:| : ::||| |
118 ||sytkq|frhgpf 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1992-325841/40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            See Q28941-Q28947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; 028943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-MAR-1991;
08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                      24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                  R27346;
```

3

Gaps

Indels

Ħ

RESULT R92794

Matches

q ð

Length 111;

us-09-451-527-92.rag

R92795;

```
The b4 peptide is a preferred signal peptide to be fused to the N-terminus of the new cytckine. The last two amino acids (Ser-Pro) are opt. absent: when absent the signal peptide is designated b3. see Q28942.Q28947.
                                                                                                                                                                                                                          Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Caput D., Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                              New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New cytokine having immunomodulatory activity - useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin; chemotaxis; immunomodulation; inflammation.
Interleukin; chemotaxis; immunomodulation; inflammation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.2%; Score 81; DB 13;
85.0%; Pred. No. 0.012;
live 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                    Claim 12; Page 61; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R27344 standard; peptide; 34 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MALWLTVVIALTCLGGLASP 20
                                                                                                                                    91FR-0003904.
92FR-0000137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92EP-0400858.
                                                                                                      92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytokine signal peptide b2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 12.2
Best Local Similarity 85.0
Matches 17; Conservative
                                                                                                                                                                                                                                                                          WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1992-325841/40
                                                                                                                                                                                        (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20 AA;
                                                                                                                                                                                                                                                                                                N-PSDB; 028941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; Q28941
                                                                                                      27-MAR-1992;
                                                                                                                                        29-MAR-1991;
                                                                                                                                                         08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-JAN-1992;
                                                                    30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-SEP-1992
                                  EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R27344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R27344
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PSPVTPSPTLKELIEELVNITONQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muteins of mouse P600 (R92795) contain amino acid substitutions at amino acid position 67 in helix C. They are obtd. by site-directed mutagenesis of natural P600 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-94, R92796-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                              Cytokine; mutein; P600; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mutein(s) of human and murine cytokine(s), esp. interleukin(s) and murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
                                                                                                                                                                                                                            an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3;
                                                                                                                                                                                                                      /note= "Arg at position 67 may be replaced by
    acid amino acid, including Asp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 17; Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44.6%; Score 295.5; DB 17; Length
55.9%; Pred. No. 4e-26;
iive 18; Mismatches 28; Indels
                                                                                                                                                                             Location/Qualifiers
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R27345 standard; peptide; 20
                                                                                                                                                                                                                                                                                                                                              95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                               94US-0284393
                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cytokine signal peptide b4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zurawski G, Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1996-129335/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111 AA;
                                                                                                                                                                                                      Misc-difference
                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                               01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-FEB-1993
                                                                                                                                                                                                                                                                          WO9604306-A2
                                                                                                                                                                                                                                                                                                                                             31-JUL-1995;
                              24-MAY-1996
                                                              Murine P600
                                                                                                                                                                                                                                                                                                           15-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62;
```

Query Match Best Local S: Matches 62

R27345;

XEXTX

RESULT 13 R27345

80

Q à

Sequence

ö

Gaps

; 0

3; Indels

Length 20;

us-09-451-527-92.rag

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                         537
   q
                                                                                                                                                                                                                                                                                                                                                                                                          δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The polynucleotide sequences given in C69455 to C69502 encode the human secreted proteins given in B38203 to B38250. B38251 to B38320 represent human secreted polypeptide sequences and proteins homologous to them, which are given in the exemplification of the present invention. Human secreted proteins have activities based on the tissues and cells the genes are expressed in. Example of activities include: immunosuppressive; antiarthritic; antirheumatic; antiproliferative; cytostatic; cardiant; vasotropic; cerebroprotective; notropic; neuroprotective; antibacterial; virucide; funglide; and ophthalmological. The polynucleotides and polypeptides can be used to prevent, treat or ameliorate a medical condition in e.g. humans, mice, rabbits, goats, horses, cats, dogs, chickens or sheep. They are also used in diagnosing a pathological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antifheumatic; antiproliferative; cytostatic; cardiant; vasotropic; cerebroprotective; noctropic; neuroprotective; antibacterial; virucide; fungicide; ophthalmological; gene therapy; autoimmune disease; infection; hyperproliferative disorder; cardiovascular disorder; angiogenesis; cerebrovascular disorder; nervous system disorder; ocular disorder; wound healing; skin aging; food additive; preservative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        secreted protein; diagnosis; immunosuppressive; antiarthritic;
                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Isolated nucleic acid molecule encoding a human secreted protein is used in preventing, treating or ameliorating a medical condition
                                                              The b2 peptide is a preferred signal peptide to be fused to the N-terminus of the new cytokine. The last two amino acids (Ser-Pro) are opt. absent; when absent the signal peptide is designated bl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human secreted protein sequence encoded by gene 38 SEQ ID NO:168.
                                                                                                                                                                                                                                       ó
tumours and infectious or inflammatory conditions
                                                                                                                                                                                                   12.2%; Score 81; DB 13; Length 34; 85.0%; Pred. No. 0.025; tive 0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 407-409; 416pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Komatsoulis G;
                                                                                                                                                                                                                                                                                                                                                                                       B38312 standard; Protein; 665 AA.
                                Claim 12; Page 61; 78pp; French.
                                                                                                                                                                                                                                                                        1 MALWLTVVIALTCLGGLASP 20
                                                                                                                                                                                                                                                                                        15 mallttvialtclggfasp 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0126509.
2000US-0174853.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-2000; 2000WO-US07579
                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                     17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-594642/56
                                                                                                                                                                                                                      Best Local Similarity
                                                                                                    are opt. absent; w
See Q28942-Q28947.
                                                                                                                                                    34 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200058469-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-MAR-1999;
07-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rosen CA,
                                                                                                                                                      Sequence
                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
ς.
Έ
                                                                                             anglogenesis, nervous system disorders, infections caused by bacteria, viruses and fungi and ocular disorders. The polypeptides can also be used to aid wound healing and epithelial cell proliferation, to prevent skin aging due to sunburn, to maintain organs before transplantation, for supporting cell culture of primary tissues, to regenerate tissues and in chemotaxis. The polypeptides can also be used as a food additive or preservative to increase or decrease storage capabilities. C64446 to C69454 and B38202 represent sequences used in the exemplification of the
condition or susceptibility to a pathological condition. Disorders which are diagnosed or treated include autoimmune diseases, hyperproliferative disorders, cardiovascular disorders, cerebrovascular disorders,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV-----WSV 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.8%; Score 78.5; DB 21; 31.0%; Pred. No. 2.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Search completed: May 13, 2001, 17:47:33
Job time: 12333 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                              present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                               665 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113 LVKNLL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||::|
|vrsp1
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
```

```
SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Aversa, Gregorio
APPLICANT: Briere, Francine
APPLICANT: Banchereau, Jacques
APPLICANT: Ge Vries, Jan
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: DNAX Research Institute 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                     US-08-012-543-2; Sequence 2, Application US/08012543; Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                    Culpepper, Janice
McKenzie, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    I: 132 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , MOLECULE TYPE: protein US-08-012-543-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE:
                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Appli
Appli
                                                                                    May 13, 2001, 14:26:17 ; Search time 42.06 Seconds (without alignments) 59.834 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Appli
Sequence 2, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                App.l.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguence 4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 25, Appl
Sequence 4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appl:i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 16, Sequence 8, At
                                                                                                                                                                              1 MALWLTVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 13,
Sequence 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Sequence 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2
Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seguence 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seguence 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5
Sequence 5
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgnl_7/ptodata/1/iaa/5A_COMB.pep:*/cgnl_7/ptodata/1/iaa/5B_COMB.pep:*/cgnl_7/ptodata/1/iaa/6A_COMB.pep:*/cgnl_7/ptodata/1/iaa/6B_COMB.pep:*/cgnl_7/ptodata/1/iaa/FGCOMB.pep:*/cgnl_7/ptodata/1/iaa/FGCOMB.pep:*/cgnl_7/ptodata/1/iaa/Packfiles1.pep:*/
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-371-121-1
US-08-284-393B-14
US-08-284-393B-14
US-08-284-393B-5
US-08-284-393B-15
US-08-284-393B-6
PCT-US95-08950-6
US-08-284-393B-16
                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US93-07645-2
US-08-371-121-16
US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-4
PCT-US93-07645-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -07-745-206A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-012-543-4
US-08-371-121-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-770-544-16
US-08-176-414B-2
                                                                                                                                                                                                                                                          185757 seqs, 19210857 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                            Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                 Issued_Patents_AA:*
                                                                                                                                                  US-09-451-527-92
                                                                                                                                                                                                                                                                                                                      seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length
                                                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         463.5
463.5
382.5
382.5
378.5
378.5
378.5
378.5
378.5
377.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       295.5
295.5
288.5
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65.5
64.5
                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                      Run on:
                                                                                                                                                Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
9
```

| Sequence 25, Appl                    | Sequence 6, Appli | Sequence 6, Appli | Sequence 2, Appli | Sequence 16, Appl | Sequence 16, Appl | Sequence 16, Appl | Sequence 10, Appl | 2, A            | Sequence 2, Appli | Sequence 2, Appli | Sequence 10, Appl | Sequence 35, Appl | 7               | 7                | Sequence 6, Appli | 4               |
|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|-------------------|-------------------|-------------------|-------------------|-----------------|------------------|-------------------|-----------------|
| US-08-687-559-25<br>US-09-188-579-85 | US-09-041-889-6   | US-08-837-058-6   | US-08-569-221A-2  | US-07-809-457A-16 | US-08-553-943-16  | PCT-US91-09437-16 | US-08-993-228-10  | US-08-222-619-2 | PCT-US95-04075-2  | US-08-731-716-2   | US-08-976-255-10  | US-08-775-009-35  | US-08-696-349-2 | PCT-US96-13156-2 | US-08-841-483-6   | US-08-722-184-4 |
| <b>(3 m</b>                          | e                 | ĸ                 | 4                 | 7                 | П                 | Ŋ                 | ~                 | Н               | S                 | 7                 | 4                 | 7                 | C               | Ŋ                | ~                 | m               |
| 268                                  | 206               | 206               | 228               | 338               | 338               | 338               | 1461              | 599             | 599               | 731               | 848               | 871               | 496             | 496              | 1117              | 338             |
| 9.7                                  | 9.7               | 6.7               | 9.7               | 9.6               | 9.6               | 9.6               | 9.6               | 9.5             | 9.5               | 9.5               | 9.5               | 9.5               | 9.4             | 9.4              | 9.4               | 9.3             |
| 64.5<br>64                           | 64                | 64                | 64                | 63.5              | 63.5              | 63.5              | 63.5              | 63              | 63                | 63                | 63                | 63                | 62              | 62               | 62                | 61.5            |
| 28<br>29                             | 30                | 31                | 32                | 33                | 34                | 35                | 36                | 37              | 38                | 39                | 40                | 41                | 42              | 43               | 44                | 45              |

## ALIGNMENTS

```
ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
US-08-371-121-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US93-07645-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                         Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                         61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                         Gaps
                                                                                                                1 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
 Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 5; Length 132;
Query Match 69.9%; Score 463.5; DB 1; Length 1
Best Local Similarity 71.8%; Pred. No. 9.9e-49;
Matches 94; Conservative 11; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 69.9%; Score 463.5; DB 5; Length Best Local Similarity 71.8%; Pred. No. 9.9e-49; Matches 94; Conservative 11; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: Macintosh 6.0.5
SOFWARE: Microsoft Word 5.1a
CURRENT APPLICATION DAYA:
APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
FILING DATE: 29-JAN-1993
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHRACTERISTICS:
LENGTH: 132 amino acids
                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application PC/TUS9307645 GENERAL INCORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 132 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: protein
                                                                                                                                                                                                                                120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                     121 HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::: ::| | | 1
121 HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                            PCT-US93-07645A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-07645A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
PCT-US93-07645-2
                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                 d
                                                                                                            QQ
                                                                                                                                                     ò
                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
```

```
TITLE OF INVENTION: Protein having a cytckine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGGFSSLHVRDTKIEVAQFVKDLLL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Score 463.5; DB 5; Pred. No. 9.9e-49; 11; Mismatches 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, MOURA
APPLICANT: RAGHAD, MOURA
APPLICANT: MARAZIN, MARIJYN
FITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                COMPUTER: APPLE Macintosh
OPERATING SYSTEM: Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
FILING DATE: 21-40G-1992
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 16, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69.9%;
71.8%;
                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 132 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: CAPUT,
```

1;

```
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                      US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60 GMYCAALESLINVSDCSALQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75 DMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MALWITVVIALICLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08284393B
Patent No. 5696234
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION:
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68.9%; Score 456.5; DB 1
71.0%; Pred. No. 8.1e-48;
Live 11; Mismatches 26
                                                                                                       PRICR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                     PCT/FR92/00280
                                                                                                                                                                                                                                                              APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERTHARD D.
REGISTRATION NUMBER: 28,665
                                           US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEX: 904136
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 146 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 71.0%
Matches 93; Conservative
                    CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: protein US-08-371-121-16
                                                                                       CLASSIFICATION: 435
                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135 HLKKLFREGRF 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

ò g ò

```
1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 PVPPSTALRELIEELVNITONOKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57.7%; Score 382.5; DB 1; Length 1
70.0%; Pred. No. 5.2e-39;
tive 11; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSE: DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURREWY APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/08950
JMBER: US/08/284,393B
01-AUG-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: DNAX Research Institute 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/284,393
FILING DATE: 01.AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4, Application PC/TUS9508950 GENERAL INFORMATION:
                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Ching, Edwin P. REGISTRATION NUMBER: 34,090
                                                                                                                                       REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: D
TELECOMMUNICATION INFORMATION
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                 LENGTH: 112 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 70.08
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                            TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 901 Cali
CITY: Palo Alto
STATE: Californi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
```

```
1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: protein US-08-371-121-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                     US-08-371-121-25
                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Wa
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                 qq
                                                                QΥ
                                                                                                 q
                                                                                                                                    δ
                                                                                                   Gaps
                                                                                                                                    22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                   Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 131;
                                                                                                                                                                                                  81 TORMLKALCSOKPAAGOISSERSRDTKIEVIOLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                Query Match 57.7%; Score 382.5; DB 5; Best Local Similarity 70.0%; Pred. No. 5.2e-39; Matches 77; Conservative 11; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PATCHTIN TO SOFTWARE: SOFTWARE: PATCHTIN TO DATA:
CURRENT APPLICATION DATA:
FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57.1%; Score 378.5; DB 1;
59.0%; Pred. No. 2e-38;
tive 19; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        de Vries, Jan
Zurawski, Gerard
/ENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 01-FEB-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                         McKenzie, Andrew
Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08012543 Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aversa, Gregorio
Briere, Francine
Banchereau, Jacques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                         Culpepper, Janice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                           Heath, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best_Local Similarity 59.0 Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 94304-1104
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Palo Alto California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
; MOLECULE TYPE:
PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE:
US-08-012-543-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                      RESULT 7
US-08-012-543-4
                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                               QQ
                                                                                                                                                                                                    δ
```

```
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                 57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
                                                                                                                                                                                        OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: LABIT-LE BOUTEILLER, Christine APPLICANT: MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3000 K Street, N.W., Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27 MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BEFTANTION:
NAME: SAXE, BEFTANTON:
NAME: SAXE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/371,123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 25, Application US/08371121; Patent No. 5652123; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: GUILLEMOT, Jear
APPLICANT: LEPLATOIS, Pasc
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 131 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: 904136,
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Washington, D.C
                                                                                                                                                                                                                                                                                                                               117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                118 LLSYTKQLFRHGPF 131
```

```
FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: M
APPLICANT: K
APPLICANT: L
APPLICANT: M
                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US93-07645-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-371-121-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                  3;
                                                                                                                                                     57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
                                                                                                                                                                         61 LAAGGECVALDSLTNISNCNAIYRTQRILHGLCNRK-APTTVSS--LPDTKIEVAHFITK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                1 MALWLTVVIALTCLGGLASPSPVTPSP···-TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                  1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                7;
                Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 131;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57.1%; Score 378.5; DB 5;
59.0%; Pred. No. 2e-38;
iive 19; Mismatches 29;
          57.1%; Score 378.5; DB 1;
59.0%; Pred. No. 2e-38;
ive 19; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Human Interleukin-13
UMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 08/010977
APPLICATION NUMBER: US 08/010977
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Macrosoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application PC/TUS9307645A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US93-07645-4; Sequence 4, Application PC/TUS9307645; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 131 amino acids
amino acid
          Query Match
Best Local Similarity 59.0
Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US93-07645A-4
                                                                                                                                                                                                                       117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                             ||:| : ::||| |
118 LLSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ||:| : ::||| |
LLSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 79; Conserva
                                                                                                                                                                                                                                                                                                                            PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                 g
                                                                                                                                                     à
                                                                                                                                                                                q
                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
TITLE OF INVENTION: Protein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQRPAAGQISSERSRDTKIEVIQLVKN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 LAAGGECVALDSLINISNCNAIYRTQRILHGLCNRK-APTTVSS--LPDTKIEVAHFITK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 3/0.2,
Pred. No. 2e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57.1%; Score 378.5; DB 5; 59.0%; Pred. No. 2e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LABIT-LE BOUTEILLER, Christine
Human Interleukin-13
                                                                                                         COMPUTER: FLORDY disk
COMPUTER: Apple MacIntosh
COMPUTER: Apple MacIntosh
COMPUTER: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 21-JAN-1993
PRIOR APPLICATION NUMBER: US 07/933416
FILING DATE: 21-JAN-1993
RELING DATE: 21-JAN-1993
REL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 1, Application US/08371121; Patent No. 5652123; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: FOLEY & LARDNER STREET: 3000 K Street, N.W., CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-SOFTWARE: Patentin Release #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MINTY, Adrian
KAGHAD, Mourac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 59.09
Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||:| : ::||| |
|118 LLSYTKQLFRHGPF 131
                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE:
```

```
22 PVTPSPTLKELIEELVNITONO-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIOR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 PVPPSTALRKLIEELVNITQNQKAPLCNGSMVMSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                               56.0%; Score 371.5; DB 1; Length 112; 68.2%; Pred. No. 1.1e-37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRIIGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: FIDPPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOGTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 5, Application US/08284393B
Patent No. 5696234
GENERAL INFORMATION:
APPLICANT:
ANAWALIAN CYTOKINES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                             34,090
                                                                                                                               REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: DX TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                  TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
                                                             ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,0
                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 68.20,
                         01-AUG-1994
                                                                                                                                                                                                                                                                  LENGTH: 112 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415-496-1200
                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 94304-1104
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Palo Alto
California
                                                                                                                                                                                                                                                                                           TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                               US-08-284-393B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-284-393B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-284-393B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 PVPPSTALRELIEELVNITONOKAPLCNGSMYWSINLTAXMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Score 375.5; DB 1; Length 1; Pred. No. 3.7e-38; 11; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTHER INFORMATION: /label- xaa OTHER INFORMATION: /note= "amino acid is Asp or Gly" US-08-371-121-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                           APPLICATION DATA:
FILING DATE: 30-NOV-1>>**
PRICR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
***ING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                             FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY FAGENT INFORMATION:
NAME: SAXE, BERNHARTON:
RECISTRATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECHNONE: (202) 672-5399
TELEFAX: 200136
                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                         APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 14, Application US/08284393B Patent No. 5696234 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56.6%;
69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 112 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Modified-site LOCATION: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 69.1%
Matches 76; Conservative
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELERAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 94304-1104
                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
US-08-284-393B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

ij

```
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
CLASSIFICATION: 435
                                                                                                                                                                          ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: May 13, 2001, 17:48:30
Sequence 15, Application US/08284393B Patent No. 5696234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE, DOCKET NUMBER: DXO:
RELECOMMUNICATION INFORMATION:
TELEPHONE: 415-82-9196
TELEFRA: 415-496-1200
INPORMATION FOR SEQ ID NO: 15:
                                                                                                                                                                                                                                                                              ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 111 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                     CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Job time: 12133 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                        22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                               2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                               5;
                                                                                                                                                                                            81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                     Length 111;
                                                           21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES NUMBER OF SEQUENCES: 13 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: PCT/US95/08950
                  Query Match 55.4%; Score 367; DB 1; Best Local Similarity 69.1%; Pred. No. 3.9e-37; Matches 76; Conservative 11; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/284,393
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                  Sequence 5, Application PC/TUS9508950 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DX0389
                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Zurawski, Sandra M. APPLICANT: Zurawski, Gerard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DXC
TELECOMMUNICATION: TELECOMMUNICATION: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 111 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RY: USA
94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                          RESULT 14
PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                          ò
                                                                                                                                                 g
                                                                                                                                                                                               ò
                                                                                                                                                                                                                                 g
```

PC-DOS/MS-DOS

USA

34,090

linear

```
3
                                                                                                                       Gaps
                                                                                            5;
                                                                                                                                                                                                      81 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRCVYRHGNF 130
                                                             Length 111;
                                                                                            22; Indels
                                                          Query Match
53.7%; Score 356; DB 1;
Best Local Similarity 67.3%; Pred. No. 8.4e-36;
Matches 74; Conservative 12; Mismatches 22,
; MOLECULE TYPE: peptide US-08-284-393B-15
```

5;

5

21; Indels

.; Score 367; DB 5; ; Pred. No. 3.9e-37; 11; Mismatches 21

55.48;

Query Match 55.4% Best Local Similarity 69.1% Matches 76; Conservative

Length 111;

81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130 

q

ö

RESULT

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
```

- protein search, using sw model protein ĕ

May 13, 2001, 14:31:11 ; Search time 64.5 Seconds Run on:

(without alignments) 139.577 Million cell updates/sec

US-09-451-527-92 663 score: Title: Perfect :

MALWLIVVIALTCLGGLASP......QLVKNLLTYVRGVYRHGNFR 131 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5

Scoring table:

Searched:

hits satisfying chosen parameters: 198801 seqs, 68722935 residues oŧ Total number

198801

length: 0
length: 2000000000 DB sed DB sed Minimum

Post-processing: Minimum Match 0%

Maximum

Listing first 45 summaries Maximum Match 100%

PIR\_67:\* Database

pirl:\* pir2:\* pir3:\* pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## CIMMADIDO

|   | SUMMARIES | Description    | interleikin-13 pre | 10    |     | TBP-interacting pr | ~~   |          | cell division prot | sepiapterin reduct | sepiapterin reduct |     | □   | hypothetical prote |      | - 1  | acrosin (EC 3.4.21 | rane | reduc | ipaC protein - Shi | ຕ<br>ບ | transcription fact |      | movement protein - | probable translati | histone H1t - rhes | ain |      | penicillin binding | hypothetical prote |   |
|---|-----------|----------------|--------------------|-------|-----|--------------------|------|----------|--------------------|--------------------|--------------------|-----|-----|--------------------|------|------|--------------------|------|-------|--------------------|--------|--------------------|------|--------------------|--------------------|--------------------|-----|------|--------------------|--------------------|---|
|   |           | DB             | ;<br>;             | 7     | ~   | 7                  | -    | 7        | 7                  | 7                  | 7                  | ~   | ~   | N                  | 7    |      | 7                  | -    | ~     | 7                  | Н      | 7                  | ~    | ~                  | 7                  | 7                  | Н   | ~    | 7                  | 7                  |   |
| D HOODHOODSOOSSOOSSOOSSOOSSOOSSOOSSOOSSOOS  |           | Length         | 146                | 131   | 131 | 1230               | 482  | 505      | 430                | 261                | 262                | 586 | 701 | 1806               | 425  | 211  | 431                | 382  | 261   | 382                | 513    | 677                | 2195 | 267                | 1057               | 208                | 323 | 1026 | 464                | 559                |   |
| •   | æ         | Ouery<br>Match | 0.0                | 7     | 2   | 11.8               | 11.4 | •        | 11.3               | <b>,</b> ⊢         | гŤ                 | Н   | Н   | П                  | 10.9 | 10.9 | 10.9               | 10.8 | 10.7  | 10.6               | 10.6   | 10.6               | 10.6 | 10.5               | 10.5               | 0                  | 0   | 10.4 | 10.3               |                    |   |
| Length<br>131<br>131<br>131<br>133<br>133<br>133<br>133<br>133<br>133<br>13   |           | Score          | 463.5              | 378.5 | 378 | 78.5               | 75.5 | 75.5     | 75                 | 74                 | 7                  | •   | 73  | 7                  |      |      | ^                  | •    | 7.1   | 70                 | 70     | 20                 | ^    | o                  | 6                  | 69                 | 69  | 9    | 8                  | 8                  | 4 |
| Ouery<br>Match Length<br>69.9<br>57.1<br>11.8<br>57.1<br>11.4<br>57.0<br>11.1<br>57.0<br>11.1<br>57.0<br>11.1<br>57.0<br>11.1<br>57.0<br>11.1<br>50.0<br>11.2<br>26.1<br>11.0<br>10.9<br>42.5<br>10.9<br>42.5<br>10.9<br>42.5<br>10.9<br>42.5<br>10.9<br>42.5<br>10.9<br>10.9<br>10.6<br>57.1<br>10.9<br>10.9<br>10.9<br>10.6<br>10.6<br>10.6<br>10.6<br>10.6<br>10.6<br>10.6<br>10.6 |           | Result<br>No.  | ٦,                 | 7     | æ   | 4                  | 2    | <b>9</b> | 7                  | æ                  | თ                  | 10  | 11  | 12                 | 13   | 14   | 15                 | 16   | 17    | 18                 | 19     | 20                 | 21   | 22                 | 23                 | 24                 | 25  | 56   | 27                 | 28                 | • |

| hypothetical prote<br>probable membrane | conserved hypothet<br>ATP-dependent RNA | DNA mismatch repair hypothetical prote | Alzn4./ Plotein -<br>hypothetical prote | probable transcrip<br>hypothetical prote | probable cinnamyl-<br>hypothetical prote | HSP60 fold T-compl<br>Clathrin heavy cha<br>fill protein - gar |
|---|---|--|---|--|--|--|
| T21064<br>S53939                        | C82178<br>S62423                        | H72427<br>T04808<br>S44851             | 712513<br>F65022                        | G70622<br>T25523                         | T16995<br>S49937                         | A71610<br>S42369<br>S40012                                     |
| 77                                      | 77                                      | 777                                    | 100                                     | 000                                      | 0 0                                      | 000  |
| 2761<br>1004                            | 408                                     | ა 4<br>4 წ.ტ<br>გ.გ.ტ                  | 242<br>1037                             | 1234                                     | 325<br>326                               | 540<br>1681<br>99  |
| 10.3<br>10.3                            | 1000                                    | 10.0                                   | 10.0                                    | 10.0                                     | 0.6<br>0.6                               | 0<br>0<br>0<br>0<br>0  |
| 68.5<br>68                              | 67                                      | 66.5<br>66.5                           | 99                                      | 66<br>65.5                               | 65.5<br>65.5                             | 65.5<br>65.5<br>65   |
| 30<br>31                                | 33.2                                    | ა ც .<br>4 დ .                         | 33.0                                    | 40                                       | 41<br>42                                 | 44<br>44<br>5  |

## ALIGNMENTS

```
C;Genetics:
A;Gene: GDB:ILI3; P600; NC30
A;Gene: GDB:ILI3; P600; NC30
A;Gene: GDB:ILI3; P600; NC30
A;Gross-references: GDB:138171; OMIM:147683
A;Map position: 5431-5431
C;Superfamily: interleukin-13
C;Superfamily: interleukin-13
C;Keywords: alternative initiators; cytokine; glycoprotein
F;1-146/Product: interleukin-13 precursor, long splice form #status predicted <PRL>
F;15-146/Product: interleukin-13 precursor, short splice form #status predicted <PRS>
F;15-146/Product: interleukin-13 #status predicted <MAT>
F;25-146/Product: interleukin-13 #status predicted <MAT>
F;25,63,71,86/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                             C;Species: Homo sapiens (man)
C;Date: 21-Jan-1994 #sequence_revision 06-Dec-1996 #text_change 22-Jun-1999
C;Accession: I38060; I38061; A47481
R;Minty, A.J.; Chalon, P.; Derocq, J.M.; Dumont, X.; Guillemot, J.C.; Kaghad, M.; Lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X69079; NID:9297787; PIDN:CAA48824.1; PID:9673420
R;MGKenzie, A.N.; Culpepper, J.A.; de Waal Malefyt, R.; Briere, F.; Punnonen, J.; Aveproc. Natl. Acad. Sci. U.S.A. 90, 3735-3739, 1993
A;Title: Interleukin 13, a T-cell-derived cytokine that regulates human monocyte and A;Reference number: A47481; MUID:93234572
                                                                                                                                                                                                                                                                                                                                                                       immune
                                                                                                                                                                                                                                                                                                                                                     A;Title: Interleukin-13 is a new human lymphokine regulating inflammatory and A;Reference number: 138060; MUID:93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 1.146 <RES>
A; Cross-references: EMBL:X69079; NID:g297787; PIDN:CAA48823.1; PID:g580330
A; Accession: I38061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A) Cross-references: GB:L06801; NID:g186275; PIDN:AAA36107.1; PID:g186276
A) Experimental source: Con A-activated CD8+ T-cell clone, Al0
A) Note: sequence extracted from NCBI backbone (NCBIP:129773)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary; not compared with conceptual translation A;Molecule type: mRNA
A;Residues: 15-146 <MCK>
                                             N; Contains: interleukin 13, short form
                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Accession: 138060
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Status: translated from GB/EMBL/DDBJ
interleukin-13 precursor - human
                                                                                                                                                                                                                                                                   a, P.; Caput, D.
Nature 362, 248-250, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 15-146 <RE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: A47481
```

## 1 MALWITVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59

ij

Gaps

DB 1; Length 146;

69.9%; Score 463.5; DB 1; Length 71.8%; Pred. No. 1e-38; Live 11; Mismatches 25; Indels

94; Conservative

Best Local Similarity

ŏ

Query Match

Ė

```
District derived endothelial cell growth factor precursor [validated] - human N; Contains: thymidine phosphorylase (EC 2.4.2.4)
C; Specias: Homo sapians (man)
C; Specias: Homo sapians (man)
C; Date: 23-Oct-1998 #sequence_revision 23-Oct-1998 #text_change 08-Dec-2000
C; Accession: S03904; JX0275; A60966
R; Ishkawa, F: Myacono, K.; Hellman, U.; Drexler, H.; Wernstedt, C.; Hagiwara, K.; Nature 338, 557-562, 1989
A; Title: Identification of angiogenic activity and the cloning and expression of plat A; Reference number: S03904; MUID:89181955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Description: considered to participate in transcription regulation through the inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: mRNA
A;Residues: 1-482 <ISH>
A;Note: part of this sequence, including the amino end of the mature protein, was con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A:Title: Thymidine phosphorylase activity associated with platelet-derived endothelia A:Reference number: JX0275; MUID:94012588
                                                                                                                                                                                                                                                                                                                                                                                       Tamura,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: EMBL: D87671; NID: 91799569; PIDN: BAA13432.1; PID: 91799570
                                                                                                                                                                                                                                                                                                             C;Species: Rattus norvegicus (Norway rat)
C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVK 115
                                                 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Furukawa, T.; Haraguchi, M.; Yoshimura, A.; Takeyasu, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LIVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV------WSV 55
                                                                                                                                                                                                                                                                                                                                                       C,Accession: T42735
R;Yogosawa, S.; Makino, Y.; Yoshida, T.; Kishimoto, T.; Muramatsu, M.;
Biochem. Biophys. Res. Commun. 229, 612-611, 1996
A;Title: Molecular cloning of a novel 120-kDa TBP-interacting protein.
A;Reference number: 222253; MUID:97127450
A;Accession: T42735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Score 78.5; D
; Pred. No. 14;
19; Mismatches
                                                                                                                                                                                                                                                           T42735
TBP-interacting protein TIP120 - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11.8%;
31.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 11.8%
Best Local Similarity 31.0%
Matches 39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Experimental source: placenta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Note: 471-Ser was also found
                                                                                                                   116 NLLTYVRGVYRHGN 129
                                                                                                                                                    || | : ::|:|:
118 KLLNYSKQLFRYGH 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9-14, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 125-244 <SUM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         741 LVRSPL 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    113 LVKNLL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Residues: 1-1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Sumizawa, T.; I
J. Biochem. 114,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: tip120
C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Genetics:
                           26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                  q
                                                                                                                   δ
                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                    T-cell activation protein P600 precursor - mouse C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999 C;Accession: E30552 R;Brown, K.D.; Zurawski, S.M.; Mosmann, T.R.; Zurawski, G. A;Immunol. 142, 679-687, 1989 A;Title: A family of small inducible proteins secreted by leukocytes are members of a nest of various activation processes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 16-Jul-1999
C;Accession: I52290
R;Lakkis, F.G.; Cruet, E.N.
Blochem. Biophys. Res. Commun. 197, 612-618, 1993
A;Title: Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13 gene expression A;Reference number: I52290; MUID:94092138
A;Accession: I52290
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .,
4
                                              GMYCAALESLINVSDCSAIQRTQRMLKALCSQRPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                       75 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:L26913; NID:g438875; PIDN:AAA16478.1; PID:g438876 C;Genetics: A;Gene: IL-13 C;Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: mRNA
X;Residues: 1-131 <BRO>
A;Cross-references: GB:M23504; NID:9533246; PIDN:AAA40149.1; PID:9533247
C;Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MALWLTVVIALTCLGGLASPSPV----TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
&
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Score 378.5; DB 2;
; Pred. No. 2.3e-30;
19; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 378; DB 2;
Pred. No. 2.6e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57.0%; Scor.
59.0%; Pred. No. z.c..
20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s of various activation processes.
A; Reference number: A30552; MUID:89093958
A; Accession: E30552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.1%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 59.09
Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ||:| : ::||| |
LLSYTKQLFRHGPF 131
                                                                                                                                                                     ::: ::| | |
135 HLKKLFREGRF 145
                                                                                                                                          120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 79; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-131 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      interleukin-13 - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118
                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
음
                                                                                   qq
                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                              ò
                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

٠. ي

Σ

```
A;Accession: S77393
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-430 <KAN>
A;Cross-references: EMBL:D90906; GB:AB001339; NID:g1652492; PIDN:BAA17496.1; PID:g165
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:S71493; NID:g957229; PIDN:AAB33611.1; PID:g957230
R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A;Tille: Detection of a novel sepiapterin reductase mRNA: Assay of mRNA in various A;Reference number: A49174; MUID:93178546
A;Accession: PH1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 209-255 <MAI>
C; Comment: This enzyme catalyzes the reduction of both C1' and C2' oxo group.
C; Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology C; Keywords: oxidoreductase
C; Superfamil: short-chain alcohol dehydrogenase homology <SADH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Accession: S52110; PH1578
R;Ota, A.; Ichinose, H.; Nagatsu, T.
Biochin. Biophys. Acta 1260, 320-322, 1995
A;Title: Mouse sepiapterin reductase: an enzyme involved in the final step of A;Accession: S52110; MUID:95178553
                                                                                                                                                                   C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000 C;Accession: S77393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C.Species: Mus musculus (house mouse)
C.Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 18-Feb-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, o, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; DNA Res. 3, 109-136, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Superfamily: cell division protein fts2
C;Keywords: cell division; GTP binding
F;161-167/Region: tubulin/Fts2 GTP/GDP-binding (G-G-T-G-[ST]-G)
F;262-269/Region: GTP hydrolizing
                                                                                                                                       - Synechocystis sp. (strain PCC 6803)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.3%; Score 75; DB 2; Length 430; 26.4%; Pred. No. 9.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11.2%; Score 74; DB 2; Length 261; 22.2%; Pred. No. 6.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 MYCAALESLINVSDCSAIQRTQRMLKAL-CSQKPAAGQISSERSRD 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Pred. No. 6.5; 27; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19 SPSPVTPSPTLKELIEELV -- NITQNQ -- -- --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sepiapterin reductase (EC 1.1.1.153) - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: S74322; MUID:97061201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 26.4
Matches 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 11.2
Best Local Similarity 22.2
Matches 32; Conservative
                                                                                           877393
cell division protein ftsZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-261 <OTA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
E83551
conserved hypothetical protein PA0752 [imported] - Pseudomonas aeruginosa (strain PA01)
C; Species: Pseudomonas aeruginosa
C; Accession: E83551
R; Stover, C.K., Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, M.J.; Bradman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, K.; Lim,
C, Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
A; Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic pathch; Reference number: A82950; MUID:20437337
A; Reference number: A82950; MUID:20437337
A; Accession: E83551
A; Residues: Pre-Liminary
A; Molecule type: DNA
A; Residues: 1-505 <STO>
A; Cross-references: GB: AE004510; GB: AE004091; NID: 99946634; PIDN: AAG04141.1; GSPDB: GN001
A; Experimental source: strain PA01
C; Genetics:
A; Gene: PA0752
R:Usuki, K.; Norberg, L.; Larsson, E.; Miyazono, K.; Hellman, U.; Wernstedt, C.; Rubin, Call Regul. 1, 577-596, 1990
A;THIE: Localization of platelet-derived endothelial cell growth factor in human placen A;Reference number: A60966, MUID:91175877
A;Reference number: A60966
A;Rolcaule type: protein
A;Residues: 6-14 <USU>
C;Genetics:
A;Genetics:
A;Genetics:
A;Genetics:
A;Genetics: A;Genetics:
A;Genetics: A;Genetics: A;Genetics:
A;Genetics: A;Genetics: A;Genetics: A;Genetics: A;Genetics: A;Genetics: A;Genetics: A;Genetics: A;Genetics: B;Genetics: A;Genetics: B;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: A;Genetics: C;Genetics: C;Geneti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      285 LEVEEALLCMDG-AGP-----PDLRDLVTTL------GGALLWLSGHAGTOAOG 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | :||:|:|::|::| ARRVAAALÜDGSALGRFERMLAAQGVDPGLARAALCSGSPAERRQLLPRAREQE-ELLAPA 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150 FVLMVFAIVCLGGMAGDRP------KFTLLAALLGLFLSSVGIDANSGVYRFTGDSIHLA 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----SAIQRTQRMLKALCSQKPAAGQISSERSRDT 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 ALESLINVSDCSAIQRTQRML-------KALCSQKPAAGQISSERSRDTKIEVIQLV 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 WLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVW----SVNLT 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.4%; Score 75.5; DB 1; Length 482; 25.4%; Pred. No. 9.3; tive 19; Mismatches 49; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.4%; Score 75.5; Di
24.6%; Pred. No. 9.8;
tive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59 AGM-YCAALESLINVSDC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KIEVIQLVKNLLTYVRGV 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SVLLVNLRCGLLGFVMGV 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 25.4%;
Matches 33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          115 KNLLTYVRGV 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DGTVELVRAL 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

5.

Gaps

31;

-----ASLCNGSMVWSVNLTAG 60

ဗ

. 9

Gaps

30;

Indels

55;

tetrahy

```
C;Accession: T51211
R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, B.; Holland, R.; Nyakatu
submitted to the Protein Sequence Database, Júly 2000
A;Reference number: 225286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Accession: S17196; S17977; S16329
R;Bachvarov, D.; Normandeau, M.; Moss, T.
FBBS Lett. 288, 55-59, 1991
A;Title: Heterogeneity in the Xenopus ribosomal transcription factor xUBF has a molec A;Reference number: S17196; MUID:91348289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for formation of a stable polymerase I promo
                                                                                                                                                                          C.Species: Neurospora crassa
C.Date: 28-Jul-2000 #sequence_revision 28-Jul-2000 #text_change 02-Sep-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N,Alternate names: upstream binding factor 2
C,Species: Xenopus laevis (African clawed frog)
C,Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 24-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 AAMNNGSLT-SVQLVG---CYVLRTF-----QTDLYINSLLQYNPDALSIAAQMD 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----PVTPSPTLKELIEELVNITQNQ 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44 ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKP----AAGQIS 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: mRNA
A;Residues: 1-31,'H' 33-701 <MOS>
A;ross:rrferences: EMBL:X59863; NID:g65264; PIDN:CAA42523.1; PID:g65265
R;MCStay, B.; Hu, C.H.; Pikaard, C.S.; Reeder, R.H.
EMBO J. 10, 2297-2303, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Residues: 1-537,'V',539-668,'D',670-701 <MCS>
A;Cross-references: EMBL:X57561; NID:g65200; PIDN:CAA40794.1; PID:g65201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Cross-references: EMBL: AL390354; GSPDB: GN00116; NCSP: B24M22.70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                            hypothetical protein B24M22.70 [imported] - Neurospora crassa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 73.5; DB Pred. No. 18; 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - African clawed frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: $17977
A; Accession: $17977
A; Accession: $17977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Title: xUBF and Ribl are both required i
A; Reference number: S16329; MUID:91293106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Map position: 6
C; Superfamily: indoleacetamide hydrolase
177 ARDMLYQVLAVEEPSVRVLSYAPG 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain OR74A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 WLTVVIAL-TCLG-GLASPS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.1%;
28.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Cross-references: EMBL: X59863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 28.29
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transcription factor UBF2
                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-586 <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-701 <BAC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: NCSP: B24M22.70
                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-537,'V',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: S16329
                                                                                                                                                                                                                                                                                                                                                    A; Accession: T51211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112 AERA 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 SERS 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Π
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: protein
A;Residues: 1-32;34;41-92,'I',96-124;126-262 <0YA>
R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A;Title: Detection of a novel sepiapterin reductase mRNA: Assay of mRNA in various cells
A;Reference number: A49174; MUID:93178546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A: Description: catalyzes the NADPH-dependent reduction of sepiapterin to produce 7,8-Dih C: Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology C: Keywords: acetylated amino end; homodimer; oxidoreductase F: 9-200/Domain: short-chain alcohol dehydrogenase homology <8ABH>
F: 1/Modified site: acetylated amino end (Met) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M36410; NID:g206895; PIDN:AAA42130.1; PID:g206896
R;Oyama, R.; Katch, S.; Suecka, T.; Suzuki, M.; Ichinose, H.; Nagatsu, T.; Titani, K.
Biochem. Biophys. Res. Commun. 173, 627-631, 1990
A;TILLE: The complete amino acid sequence of the mature form of rat sepiapterin reductas A;Reference number: A36400; MUID:91083647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 2092-255 4MAI>
A; Cross-references: GB:S55545; NID:9266077; PIDN:AAB25506.1; PID:9266078
A; Cross-references: GB:S55545; NID:9266077; PIDN:AAB25506.1; PID:9266078
R; Maler, J.; Schott, K; Merner, T.; Bacher, A.; Ziegler, I.
Adv. Exp. Med. Biol. 338, 195-198, 1993
A; Title: Northern blot analysis of sepiapterin reductase mRNA in mammalian cell lines
A; Reference numbor: 151849; MulD:94136218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C.Date: 11.-Jan-1991 #sequence_revision 07-Jul-1995 #text_change 01-Dec-2000 C.Accession: A36024; A36400; PH1577; 164799; A49174 R.Citron, B.A.; Milstlen, S.; Gutierrez, J.C.; Levine, R.A.; Yanak, B.L.; Kaufman, Proc. Natl. Acad. Sci. U.S.A. 87, 6436-6440, 1990 A; Title: Isolation and expression of rat liver sepiapterin reductase cDNA. A; Reference number: A36024; MUID:90349631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                  62 LKVVLAAADLGTEAGVORLLSAVRELPRPEGLORLLINNAATLGDVSKGFLNVN----D 117
                                                                                                                 LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG---QISSER 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           46 LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG---QISSER 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LQVVLAAADLGTESGVQQLLSAVRELPRPERLQRLLLINNAGTLGDVSKGFLNIN----D 117
5 LTVVIALTCLGGLAS------PSP-----VTPSPTLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 LTVVIALTCLG-----GLASPSPVTPSP------TLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 74;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                    sepiapterin reductase (EC 1.1.1.153) - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 209-255 <RES>
A; Cross-references: GB:S71374; NID:9557901
C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Species: Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                   103 SRDTKIEVIQLVK---NLLTYVRG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103 SRDTKIEVIQLVK---NLLTYVRG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11.2%; 23.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 4-262 <CIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A36024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: A36400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Accession: PH1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession: 164799
                                                                                                              46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                     g
                                                                                                           ò
                                                                                                                                                              QQ
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

6

Q

ò

QQ

à

5

```
acrosin (EC 3.4.21.10) precursor - rabbit C; Species: Oryctolagus cuniculus (domestic rabbit)
C; Species: 26-Dec-1994 #sequence_revision 10-Nov-1995 #text_change 22-Jun-1999
C; Accession: S47538
R; Richardson, R.T.; O'Rand, M.G.
Biochim. Biophys. Acta 1219, 215-218, 1994
A; Title: Cloning and sequencing of cDNAs for rabbit preproacrosin and a novel preproa A; Accession: S47538; MUID:94368861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-211 <COL>
C;Comment: This histone is a testis-specific H1 variant that appears during meiosis i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleosome; sperm
                                        A;Cross-references: EMBL:AL157918; PIDN:CAB76047.1; GSPDB:GN00067; SPDB:SPBC21C3.11 A;Experimental source: strain 972h(-); cosmid c21C3 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a testis-specific H1 histone variant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Sus scrofa domestica (domestic pig)
C;Date: 30-Jun-1987 #sequence_revision 30-Jun-1987 #text_change 16-Feb-1997
C;Accession: A02581
R;Cole, K.D.; York, R.G.; Kistler, W.S.
A;Title: The amino acid sequence of boar Hlt, a testis-specific Hl histone valveference number: A02581; MUID:85054795
                                                                                                                                                                                                                                                                                                                                                                                                                          62 YCAALESLINVS--DCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: mRNA
A;Residues: 1-431 <RIC>
A;Cross-references: EMBL:U05204; NID:g451841; PIDN:AAA61630.1; PID:g451842
C;Superfamily: acrosin; trypsin homology
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                         13 CLGGLASPSPVTPSPTLKELI----EELVNITQNQASLCNGSMVWSVNLTA-----GM 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16 GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76 SAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLV-KNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA binding;
                                                                                                                                                                                                                                                                                15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Keywords: acetylated amino end; chromosomal protein; DNA binding F;1/Modified site: acetylated amino end (Ala) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33; Indels
                                                                                                                                                                                                                                                                              61; Indels
                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                          ; Score 72; DB 1; Pred. No. 8.1; 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.9%;
25.6%;
                                                                                                                                                                                                                                                     Best Local Similarity 27.8 Matches 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | | :| ||:
126 KVSHVLINGRNFK 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120 YVRGVYRHG-NFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Superfamily: histone H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 30; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein A; Residues: 1-211 <COL>
                                                                                                                               A; Gene: SPDB:SPBC21C3.11
                              1-425 <SEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A02581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           histone Hlt - piq
                                                                                                                                                           A; Map position: 2
                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S47538
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T50355
hypothetical protein SPBC21C3.11 [imported] - fission yeast (Schizosaccharomyces pombe)
cispecies: Schizosaccharomyces pombe
C; Species: Schizosaccharomyces pombe
C; Date: 09-Jun-2000 #sequence_revision 09-Jun-2000 #text_change 09-Jun-2000
C; Accession: T50355
R; Seeger, K.; Harris, D.; Lyne, M.; Rajandream, M.A.; Barrell, B.G.
B; Seeger, K.; Harris, Data Library, February 2000
A; Reference number: Z25064
A; Accession: T50355
A; Accession: T50355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Map position: 2
A;Introns: 24/2; 77/3; 294/2; 378/3; 433/3; 478/3; 523/3; 743/1; 794/3; 1049/3; 1414/3;
                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-1806 <WIL>
A; Cross-references: EMBL: 283232; PIDN: CABO5755.1; GSPDB: GN00020; CESP: K04B12.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein KO4B12.1 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Target: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T23298
R;Steward, C.
submitted to the EMBL Data Library, December 1996
                                                                                                                                                                                                                                                                                                                                                                                                   --KPAAGQISSERSRDTKIEVI 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        575 ANWITT------GVSCPSEIFTSPNTFEIL-LLTSISNNPISRHNFTVYDCSGYGTCS 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55 VNLTAGMYCAALESLINVSD-CSAIQRTQRMLKALCSQRPAAGQISSERSRDTKIEVIQL 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCMSSEYNCAWCSGLHKCSNSCGALEKSKACVKIQPMRLPIA--IGSQQ-----EIVLE 677
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 ALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASL-----CNGSMVWS 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.0%; Score 73; DB 2; Length 1806; 25.5%; Pred. No. 74;
                                                                                                                                                                                                                                                                 DB 2; Length 701;
25;
                                                                                                                                                                                                                                                                                                                           14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50; Indels
                                                    HMG box proteins; HMG box homology transcription factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24; Mismatches
                                                                                                                                                                                                                                                                                                                      15, Mismatches
                                                                                                                                                                                                                                                                                                                                                                        61 MYCAALESLINVSDCSAIQRTQRMLKALCSQ-----
                                                                                                                                                                                                                                                                      11.0%; Score 73; 31.8%; Pred. No.
                                                                                               homology <HMG1>
homology <HMG2>
homology <HMG3>
homology <HMG4>
homology <HMG4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Experimental source: clone K04B12
                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 31.8%
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114 VKNLLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 25.5
Matches 35; Conservative
C;Genetics:
A;Gene: UBF2
C;Superfamily: unassigned HN
C;Keywords: DNA binding; tre
F;109-184/Domain: HMG box hc
F;193-268/Domain: HMG box hc
F;294-36/Domain: HMG box hc
F;224-35/Domain: HMG box hc
F;204-578/Domain: HMG box hc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Reference number: Z19723
A;Accession: T23298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: CESP: K04B12.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : ::||
RFLENL 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112 QLVKNL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
```

·.

g

ò Ω ò Q

ò

```
C;Keywords: glycoprotein; hydrolase; serine proteinase F;40-283/Domain: trypsin homology <TRY>
```

Search completed: May 13, 2001, 21:48:37 Job time: 26246 sec

5,

```
May 13, 2001, 17:59:23 ; Search time 44.64 Seconds (without alignments) 100.526 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                  1 MALWLTVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                       93435
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                      93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                          OM protein . protein search, using sw model
                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                      US-09-451-527-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SwissProt_39:*
                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                         Run on:
                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                æ
```

| _          |             |                    |                   |                    |                    |                    |            |                    |                    |                    |                      |         |            |                    |            |            |            |            |                    |           |                    |            |            |                   |                    |                    |                    |                    |                    |                    |                    |                    |            |                    |
|------------|-------------|--------------------|-------------------|--------------------|--------------------|--------------------|------------|--------------------|--------------------|--------------------|----------------------|---------|------------|--------------------|------------|------------|------------|------------|--------------------|-----------|--------------------|------------|------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------------|--------------------|
|            | Description | P35225 homo sapien | Q9xsv9 bos taurus | P20109 mus musculu | P42203 rattus norv | P19971 homo sapien |            | Q64105 mus musculu | P18297 rattus norv | P25980 xenopus lae | , Q9y613 homo sapien |         |            | P18012 shigella fl |            |            |            |            | P25979 xenopus lae |           | P01870 oryctolagus |            |            | P74925 thermotoga | P34528 caenorhabdi | P24177 escherichia | P96380 mycobacteri | P40531 saccharomyc | P34574 caenorhabdi | Q38737 antirrhinum | P34530 caenorhabdi | P30737 tobacco mos |            | Q53197 rhizobium s |
| 09.740.300 | ΙD          | IL13_HUMAN         | IL13_BOVIN        | IL13_MOUSE         | IL13_RAT           | TYPH_HUMAN         | FTSZ_SYNY3 | SPRE_MOUSE         | SPRE_RAT           | UBF2_XENLA         | FHOS_HUMAN           | H1T_PIG | ACRO_RABIT | IPAC_SHIFL         | SPRE_HUMAN | FLHC_SALTY | IPAC_SHIDY | AQL1_THEAQ | UBF1_XENLA         | H1T_MACMU | GC_RABIT           | YGZ1_YEAST | YA88_SCHPO | MUTL_THEMA        | YM67_CAEEL         | ACRD_ECOLI         | MFD_MYCTU          | YIE1_YEAST         | CLH_CAEEL          | FIL1_ANTMA         | YM91_CAEEL         | MOVP_TMVKR         | ATPD_STRLI | Y4UC_RHISN         |
|            | DB          | 7                  | 7                 | <del>-</del>       | ٦                  |                    | 7          | Н.                 | -                  | 7                  | 7                    | 7       | ٦.         | 7                  | _          | 7          | 7          | _          | -                  | -         | 7                  | П          | ٦.         | -                 | -                  | 7                  |                    | _                  | ٦.                 | -                  | <del>-</del> -     | -                  | ·          |                    |
|            | Length      | 132                | 132               | 131                | 131                | 482                | 430        | 261                | 262                | 701                | 1164                 | 211     | 431        | 382                | 261        | 192        | 382        | 513        | 677                | 207       | 323                | 1004       | 481        | 510               | 585                | 1037               | 1234               | 326                | 1681               | 66                 | 203                | 268                | 272        | 512                |
| %<br>Ouery | _ '         | 6.69               | *                 | 57.1               | 57.0               | 11.4               | 11.3       | 11.2               | 11.2               | 11.0               | 11.0                 | 10.9    | 10.9       | 10.8               | 10.7       | 10.6       | 10.6       | 10.6       | 10.6               | 10.4      | 10.4               | 10.3       | 10.1       | 10.1              | 10.0               | 10.0               | 10.0               | o.<br>6            | თ<br>თ             | 8.                 | 8.8                | 8.6                | ω.         | ω.<br>∞.           |
|            | Score       | 463.5              | 427.5             | 378.5              | 378                | 75.5               | 75         | 74                 | 74                 | 73                 | 73                   | 72      | 72         | 71.5               | 7.1        | 70.5       | 70         | 70         | 70                 | 69        | 69                 | 68         | 67         | 10                | 99                 | 99                 | S                  | 65.5               | 65.5               | 65                 | 65                 | 65                 | 65         | 65                 |
| Result     | No.         | н                  | 7                 | m                  | 4                  | ഗ                  | 9          | 7                  | æ                  | σ,                 | 10                   | 11      | 12         | 13                 | 14         | 15         | 16         | 17         | 18                 | 19        | 20                 | 21         | 22         | 23                | 24                 | 25                 | 56                 | 27                 | 28                 | 29                 | 30                 | 31                 | 32         | 5.5                |

| homo sapien<br>schizosacch<br>tobacco mos<br>tobacco mos<br>tobacco mos<br>pseudomonas<br>xenopus lae<br>autographa<br>homo sapien<br>mycobacteri<br>mus musculu                     |   | 1;  | P.,<br>ry and  |  |  |  |  |
|--|---|---|--|--|--|--|--|
| sc to  |   | stomi   | ira<br>ara   | S.,  | ۵.,  |  | #<br>-   |
| 099797<br>014338<br>P03583<br>098746<br>Q51813<br>P42700<br>P24656<br>P224656<br>P224656<br>P224936<br>054834  |   | O   | Guillemot J.C.,<br>Miloux B.,<br>hire D., Ferrara P<br>lating inflammator        | riere F.,<br>.G., Menon S.,<br>egulates human  | ., Short   | .I.;<br>and  | ses.<br>eukin-13   |
|  | AA.<br>e)   | teb   | X., Guille<br>P., Milous<br>T., Shire D<br>regulating                            | t R., Briere<br>Cocks B.G.,<br>t.;<br>that regula<br>(1993).   | ഗ വ  | 21105;<br>, Korobko V.G., Frolova E<br>n genes for interleukin-4<br>: in their organization.";   | DBJ databases.   |
|  | in Da   | ; Ve<br>ni;   | ., Dumont<br>Liauzun<br>Lupker J.<br>nphokine ř                                  | lefy<br>W.,<br>G.R<br>kine   | Lovett M., Burr J.,<br>the EMBL/GenBank/DDBJ     | .G.,<br>int  | EMBL/GenBank/DDBJ<br>30359;<br>ichards W.G.;<br>e 3-D structure of   |
| LHUMAN SCHPO SCHPO THWVB THWVB THWVRA LYBEFL XENLA NPVAC HUMAN MYCTU MYCTU MYCTU MYCTU   | ALIGNMENT RT; 132 RT; 132 ence upda tation up   | iata<br>rrhi  | .M., Dumoni<br>P., Liauzui<br>., Lupker ,<br>lymphokine                          | l Ma<br>ang<br>wski<br>wski<br>cytc  | ., Burr<br>GenBank                               | ko v<br>for<br>ir c  | enBaı<br>W.G   |
| PMIP_HUMAN<br>YB33_SCHPO<br>MOVP_TMV<br>MOVP_TMVB<br>MOVP_TMVB<br>MOVP_TMVB<br>1A1D_PSEFL<br>PTP_NOSO_XENLA<br>PTP_NOSO_XENLA<br>HIT_HUMAN<br>MP64_MYCTU<br>RHG6_MOUSE<br>RHG6_HUMAN | ALIG<br>PRT;<br>Led)<br>sequence<br>annotati  | Craniata; V<br>Catarrhini;  | J.M.<br>P.,<br>3.,<br>1ym  | 24;<br>Waa<br>., D<br>Zura<br>/ed<br>;   | : М.<br>3L/G                                     | )5;<br>orob<br>enes<br>the   | EMBL/G<br>10359;<br>chards<br>3 3 D s  |
| YBAIP<br>XB33<br>MOVP<br>MOVP<br>1A1D<br>ROED<br>PTP<br>HIT<br>MP64<br>RHG6  | ted)<br>sequann   | a; (s; 693;   | , Derocq J<br>Leplatois<br>, Loison G<br>new human<br>93).                       | 9733<br>A.,<br>O A<br>., J<br>n. "   | ., Lovett M<br>o the EMBL/                       | 211(<br>, Kc<br>, n ge<br>in   | EMI<br>303:<br>1chi<br>e 3.  |
|  | ي تد تد ق   | dat<br>ate  | lat<br>lat<br>ois<br>hu  | =80<br>J.<br>Sat<br>u J<br>1-d<br>tio  | Lothe  | =77<br>I.G.<br>uma<br>nce  | the En   |
| 713<br>268<br>268<br>336<br>338<br>168<br>206<br>381<br>581  | Ö, Cr.  | man).<br>Chordata; Cranie<br>ia; Primates; Catarr<br>A.<br>PubMed=8096327;  | P., D. P., Lep. P., Lep. a new (1993)  | PubMed<br>pepper<br>1 G.,<br>cherea<br>T-cel<br>L func   | D.B.,<br>C.;<br>15) to                           | A. PubMed=7721 irnova M.G., ent of human resemblance i (1995).   | to<br>Med<br>D.<br>Of  |
| 99999999999999999999999999999999999999   | STAN<br>(Rel. (Rel. ( | 0.<br>s (Human).<br>Metazoa; Cl<br>utheria; P<br>9606;<br>OM N.A.   | Chalon Labit C. Casellas in-13 is a ponses.";                                    | OM N.A. 34572; I N., Culk F., Banc D., Banc  | ROM N.A.<br>., Lewis<br>Gibson C                 | OM N.A.<br>d;<br>37624; B<br>·, Smirr<br>angement<br>angement<br>-13: res  | OM N.A. Kim B.E.; JAN-1998) tc E MODELING. 32583; PubM Rodelling of Modelling of   |
| 66666666666666666666666666666666666666   | LLT 1<br>LLMAAN<br>ILM3_HUMAN STANDAI<br>955225; 043644;<br>01-FEB-1994 (Rel. 28,<br>01-CFT-2000 (Rel. 28,<br>01-CT-2000 (Rel. 28,<br>117ER-1994 (Rel. 28,  | ILL3 OR NC30. Homo saplens (Human) Eukaryota; Metazoa; Mammalia; Eutheria; NCBL_TaxID=9606; [1] SEQUENCE FROM N.A. MEDLINE=93211479; Pu | Minty A.J., Kaghad M., Minty C., C Caput D.; "Interleuki immune resp immune 362: | MEDLINE=93234572; PubMed=8097324; MEDLINE=93234572; PubMed=8097324; Maal Malefyt R., Br McKenzie A.N., Culpepper J.A., Waal Malefyt R., Br Punnonen J., Aversa G., Sato A., Dang W., Cocks B. ed Viles J.E., Banchereau J., Zurawski G.R.; Interleukin 13, a T-cell-derived cytokine that re monocyte and B-cell function."; Proc. Natl. Acad. Sci. U.S.A. 90:3735-3739(1993).   | SEQUENCE FRODOLGANON G. McGurn M., Submitted (4) | SEQUENCE FROM N.A. TISSUE-Blood; MEDLINE-95237624; Pub Smirnov D.V., Smirnov "Tandem arrangement o interleukin-13: resem Gene 155:277-281(1995   | SEQUENCE FROM N Jang J.S., Kim B Submitted (JAN-1) [6] 3D-STRUCTURE MOD MEDLINE-95132583 Bamborough P., D Predictive mode Protein Eng. 7:1 |
|  | 13  | GN ILL OS HOI OC EU OC MAI OX NCI RR [1] RR SEC   | RA MIN<br>RA KA<br>RA MIN<br>RA CA<br>RT "IN<br>RT IM                            | RY MEER RA MCE RA MCE RA MCE RA Puc RA CHE R | RP SEC<br>RA DO<br>RA MCC<br>RL Sul              | RP SEC TICK RX MEE RA SM RT TO THE RT TO THE RE TO THE TO THE RE TO THE TO THE RE TO THE TO THE RE TO THE TO |  |

```
L13_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
| 11,13_BOVIN | 11,13_BOVIN | 11,13_BOVIN | 11,13_BV | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 | 10,00 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                             Gao P.-S.,
ita T., Roberts M.H.,
                                                                                                                                                                                                                                                                                           POLYMORPHISM: GLN AT POSITION 130 IS A SIGNIFICANT RISK FACTOR FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Helbranan A., Mac X. Q., Akalawa M., Kreomer R.T., Gao P.-S., Obshima K., Umeshita R., Abe Y., Braun S., Yamashita T., Roberts M.H. Suglanco R., Arima R., Arinobu Y., Yu B., Kruse S., Enomoto T., Dake Y., Kawai M., Shimasu S., Sasaki S., Adra C.N., Kitaichi M., Inoue H., Yamauchi K., Tomichi N., Kurimoto F., Hamasaki N., Hopkin J.M., Zubhara K., Shirakawa T., Deichmann K.A.; Genetic Variance of IL-13 signalling and human asthma and atopy."; Hum. Mol. Genet. 9:540-559(2000).

-!- PUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION. SYNERGIZES WITH IL2 IN REGULATING INFERFERON-GAMMA SYNTHESIS.

MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1; Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cytokine; Glycoprotein; Signal; 3D-structure; Polymorphism. SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R -> Q.
/FTId-VAR_010037.
A -> R (IN REF. 4).
S -> G (IN REF. 5).
MISSING (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC...) (
N-LINKED (GLCNAC...) (
N-LINKED (GLCNAC...) (
N-LINKED (GLCNAC...) (
R -> 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69.9%; Score 463.5; DB 1
71.8%; Pred. No. 8.1e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INTERLEUKIN-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001325; -- PROSITE; PS00838; INTERLEUKIN_4_13; 1.
                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: SECRETED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL, X69079, CAA48824.1; --
EMBL, X69079, CAA48823.1; ALT_INIT.
EMBL, U31120; AAB01681.1; --
EMBL, U10307; AAA83738.1; --
EMBL, AF043334; AAC03535.1; --
                       MEDLINE-20164293; Pubmed-10699178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14319 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; L06801; AAA36107.1; -.
EMBL; X69079; CAA48824.1; -.
EMBL; X69079; CAA48823.1; ALT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94; Conservative
                                                                                                                                                                                                                                                                                                                ASTHMA DEVELOPMENT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
132
76
90
38
49
72
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; A47481; A47481.
PDB; 3ITR; 15-JAN-95.
PDB; 3ITS; 26-JAN-95.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ::: ::| | |
HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45
87
98
132 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MIM; 147683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s its content is in no way
Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wa modified and this statement is not removed. Usage by and for commercia entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Buitkamp J., Jann O., Fries R.;
The bovine interleukin-13 gene: genomic organization, chromosomal
location and evolution of the promoter.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
SYNERGIZES WITH IL2 IN REGULATING INTERFERON-GAMMA SYNTHESIS. MI
BE CRITICAL IN REGULATING INFERAMMATORY AND IMMUNE RESPONSES (BY
                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-FEB-1991 (Rel. 17, Created)
1-FEB-1991 (Rel. 17, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
11-JUL-1998 (Rel. 36, Last annotation update)
11-JUL-1998 (Rel. 36, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64.5%; Score 427.5; DB 1; Length 132; 66.4%; Pred. No. 3.3e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC...) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...)) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...)) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...)) (POINTINKED (GLCNAC...) (POINTINKED (GLCNAC...)) (P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY).
-!- SUBCELLULAR LOCATION: SECRETED.
-!- SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00838; INTERLEUKIN_4_13; 1. Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                              INTERLEUKIN-13 PRECURSOR (IL-13).
                                                          (Rel. 39, Created)
(Rel. 39, Last sequ
(Rel. 39, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AJ132441; CAB46636.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14623 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87; Conservative
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
132
76
90
38
49
57
                                                                                                                                                                                                                                                                                                                                                                                                                             Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                        Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120 YVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : | |:|: |
121 HSRIVFRNERF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                            30-MAY-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
IL13_MOUSE
ID IL13_MOUSE
AC P20109;
                                                                                                                    30-MAY-2000
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
DISULFID
DISULFID
```

ï

RESULT

 $\sim$ 

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
14093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                 131
131
94
53
76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116 NLLTYVRGVYRHGN 129
                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001325; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22
52
68
42
53
76
121
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                       HSSP; P35225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GLIOSTATIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
SEQUENCE
                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ECGF1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPH_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the SWiss Institute of Bloinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57 LTAGMYCAALESLINVSDCSATQRTQRMLKALCSQKPAAGQISSERSRUTKIEVIQLVKN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MALWLTVVIALTCLGGLASPSPVTPSP-.--TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                 Brown K.D., Zurawski S.M., Mosmann T.R., Zurawski G.;
"A family of small inducible proteins secreted by leukocytes are members of a new superfamily that includes leukocyte and fibroblast-derived inflammatory agents, growth factors, and indicators of various activation processes.";
J. Immunol. 142:679-687(1989).

SYNERGIZES WITH ILZ IN REGULATING INFERENCY CYTOKINE PRODUCTION.
SYNERGIZES WITH ILZ IN REGULATING INFERMATORY AND IMMUNE RESPONSES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
Rattus norvegicus (Rat).
                          Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HALL

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

N'LINKED (GLCNAC. ..) (POTENTIAL).

N'LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Léngth 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    954F93F105713FED CRC64;
                                                                                                                                                                                                                                                      SUBCELLULAR LOCATION: SECRETED.
SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.1%; Score 378.5; DB 1
59.0%; Pred. No. 2.8e-31;
iive 19; Mismatches 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       131 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interpro; IPR001325; -. PROSITE; PS00838; INTERLEUKIN_4_13; 1.
                                                                                               MEDLINE-89093958; PubMed-2521353;
                         Eukaryota, Metazoa, Chordata,
Mammalia, Eutheria, Rodentia,
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytokine; Glycoprotein; Signal Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14107 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M23504; AAA40149.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 59.0 Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21
131
79
93
42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 LLTYVRGVYRHGNF 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ||:| : ::||| |
LLSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGD; MGI:96541; Ill3.
              Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; E30552; E30552.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22
51
67
42
52
75
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P35225; 3ITR
                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IL13_RAT
P42203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IL13_RAT
```

g

à

qq

ò

g

ò

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56 NLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVK 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :|||| :||||||| |:| |:| |:|| |||||| |:|
61 DLTAGGFCAALESLTNISSCNAIHRTQRILNGLCNQK--ASDVASS-PPDTKIEVAQFIS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MALWLTVVIALTCLGGLASPSPV----TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSV 55
STRAIN-SPRAUGE-DAWLEY; TISSUE-Kidney cortex;
MEDLINE-94092138; PubMed=7916615;
Lakkis F.G., Cruet E.N.;
"Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13
gene expression in experimental glomerulonephritis.";
Blochen. Blochen. Blochen. Res. Commun. 197:612-618 (1993).
-!- FUNCTION: CYTOKINE INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
SYNERGIZES WITH ILZ IN REGULATING INTERPERON-CAMMA SYNTHESIS.
MAX BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
(BY SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .,
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPH_HUMAN STANDARD; PRT; 482 AA.
P19971; Q13390;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
THYMIDINE PHOSPHORYLASE PRECURSOR (EC 2.4.2.4) (TDRPASE) (FLAMILET-DERIVED ENDOTHELIAL CELL GROWTH FACTOR) (PD-ECGF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57.0%; Score 378; DB 1; Length 131; 59.0%; Pred. No. 3.1e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E5008CAB8DE8C201 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INTERLEUKIN-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00838; INTERLEUKIN 4-13; 1. Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; L26913; AAA16478.1; -.
```

4

```
SKELETAL MUSCLE MITOCHONDRIAL DNA (MTDNA). IT IS CLINICALLY CHARACTERIZED BY ONSET BETWEEN THE SECOND AND FIFTH DECADES OF LIFE, PTOSIS, PROGRESSIVE EXTERNAL OPHTHALMOPLECIA.

GASTROINTESTINAL DYSMOTILITY (OFTEN PSEUDOOBSTRUCTION), DIFFUSE LEUKOENCEPHALOPATHY, THIN BODY HABITUS, PERIPHERAL NEUROPATHY, AND
                                                                                    Ishikawa F., Miyazono K., Hellman U., Drexler H., Wernstedt C., Hagiwara K., Usuki K., Takaku F., Risau W., Heldin C.-H.; "Identification of angiogenic activity and the cloning and expression of platelet-derived endothelial cell growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: MAY HAVE A ROLE IN MAINTAINING THE INTEGRITY OF THE BLOOD VESSELS. HAS GROWTH PROMOTING ACTIVITY ON ENDOTHELIAL CELLS, ANGIOGENIC ACTIVITY IN VIVO AND CHEMOTACTIC ACTIVITY ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 149-244 FROM N.A., AND SEQUENCE OF 125-178 AND 236-244. MEDLINE-92236753; PubMed-1570012; Furukawa T., Yoshimura A., Sumizawa T., Haraguchi M., Akiyama S.-I., Fukui K., Yamada Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Miyamoto T., Kato T.; "Nation of gliostatin on cortical neurons. Identity of gliostatin and platelet-derived endothelial cell growth factor."; J. Biol. Chem. 267:20311-20316(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PARTIAL SEQUENCE.
MEDLINE-93015908; Pubmed-1400349;
Asai K., Nakanishi K., Isobe I., Eksioglu Y.Z., Hirano A., Hama K.,
Miyamoto T., Kato T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENDOTHELIAL CELLS IN VITRO. FUNCTION: CATALOGES THE PROPERTY CATALOGES THE REVERSIBLE PHOSPHOROLYSIS OF THYMIDINE. THE PRODUCED MOLECULES ARE THEN UTILIZED AS CARBON AND ENERGY SOURCES OR IN THE RESCUE OF PYRIMIDINE BASES FOR NUCLEOTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usuki K., Saras J., Waltenberger J., Miyazono K., Pierce G., Thomason A., Heldin C.-H., "Platelet-derived endothelial cell growth factor has thymidine phosphorylase activity.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: BELONGS TO THE THYMIDINE/PYRIMIDINE-NUCLEOSIDE PHOSPHORYLASES FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nishino I., Spinazzola A., Hirano M.;
"Thymidine phosphorylase gene mutations in MNGIE, a human
                                                                                                                                                                                                                                                                                                      Venter J.C.;
Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                     Adams M.D., Kerlavage A.R., Fuldner R.A., Phillips C.A.,
                                                                                                                                                                                                               Finnis C., Goodey A.R., Courtney M., Sleep D.;
Submitted (XXX-1991) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Biophys. Res. Commun. 184:1311-1316(1992)
                                  SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-92272724; PubMed-1590793;
                                                     TISSUE=Placenta;
MEDLINE=89181955; PubMed=2467210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-99123033; PubMed-9924029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mitochondrial disorder.";
Science 283:689-692(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                             "Anglogenic factor.";
Nature 356:668-668(1992).
                                                                                                                                                          Nature 338:557-562(1989)
                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANTS MNGIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYNTHESIS.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 ALESLINVSDCSAIQRTQRML------KALCSQKPAAGQISSERSRDTKIEVIQLV 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 LÏVVIALICLGGLASPSPVIPSPILKELIEELVNIIQNQASLCNGSMVWSVNLIAGMYCA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29;
                                                                                                                                                                                                                                       Growth factor; Chemotaxis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
            WWW="http://www.rndsystems.com/cyt_cat/pdecgf.html".
                                                                                                                                                                                                                                                  Vascularization; Repeat; Polymorphism; Disease mutation.
                                                                                                                                                                                                                                                                                      R-V-A-A-A-L-X(5,6)-L-G-R.
R-V-A-A-A-L-X(5,6)-L-G-R.
R-A-L-X-X-A-L-V-L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /FTId=VAR_007648.
G -> R (IN REF. 3).
S -> N (IN REF. 3).
0652FA132C3BDE28 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chrococcales; Synechocystis.
                                                                                                                                                                                                                                                                           THYMIDINE PHOSPHORYLASE.
DATABASE: NAME=R&D Systems' cytokine source book
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49;
                                                                                                                                                                                                                                                                                                                      R-A-L-X-X-A-L-V-L.
G -> R (IN MNGIE).
FTIG=VAR_007643.
G -> S (IN MNGIE).
FTIG=VAR_007644.
K -> S (IN MNGIE).
FTIG=VAR_007645.
E -> A (IN MNGIE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                               (IN MNGIE)
                                                                                                                                                                                                                                                                                                                                                                                                                     FTIG=VAR_007646
                                                                                                                                                                                                                                                                                                                                                                                                                                             /FTId=VAR_007647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
CELL DIVISION PROTEIN FTS2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       430 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19; Mismatches
                                                                                                                                                                                                               Pfam; PF00591; Glycos_transf_3; 1.
PROSITE; PS00647; THYMID_PHOSPHORYLASE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 75.5;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                MISSING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٨
                                                                                                                                                                                                                                         Glycosyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MW.
                                                                                                                             EMBL; M63193; AAA60043.1; -. EMBL; U62317; AAB03344.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.4%;
25.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     49981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                          482
279
342
401
461
                                                                                                                                                                                        InterPro; IPR000053; -. InterPro; IPR000312; -.
                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                                         289
                                                                                                                                                                                                                                                                                                                                                                                                                               398
                                                                                                                                                                                                                                                                                                                                                                                                                                                       471
                                                                                                                                                      S03904; S03904.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          452
482 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DGTVELVRAL 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115 KNLLTYVRGV 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                           11
265
329
393
453
                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                                                                         289
                                                                                                                                                                                                                                                                                                                                                                                                                               397
                                                                                                                                                                                                                                                                                                                                                                                                                                                       471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OR SLL1633.
                                                                                                                                                                                                                                         Transferase;
                                                                                                                                                                            MIM; 603041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FTSZ_SYNY3
P73456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                                    VARIANT
                                                                                                                                                                                                                                                                                                                                                           VARIANT
                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                PROPEP
                                                                                                                                                                                                                                                                                                                         REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
FTSZ_SYNY3
                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FTSZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            386
pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID DT DT OC OC OC OC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Park Y.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                        ١
                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ئ</u>
                                       A MEDLINE-97061201; Pubmed-8905231;

Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,

Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,

Myajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,

Myajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,

Myajima N., Hirosawa M., Tabata S.,

Namada M., Yasuda M., Tabata S.;

Yamada M., Yasuda M., Yasuda T., Watanabe A.;

Yamada M., Yasuda M., Tabata S.;

Yamada M., Yasuda M., Yasuda T., Watanaba C.;

Yamada M., Yasuda M., Yasuda T., Watanaba C.;

Yamada M., Yasuda M., Yasuda T., Watanaba C.;

Yamada M., Yasuda T., Watanaba M., Watanaba M., Yasuda T., He INNER SURFACE OF THE CYTOPLASNIC MEMBRAHE AT THE INNER SURFACE OF THE CYTOPLASNIC MEMBRAHE M.)

Yamada M., Yasuda T., Yasuda T., Yasuda T., He INNER SURFACE OF THE CYTOPLASNIC MEMBRAHE M.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :|: :||| || ::| :| : 46 TPTFASPSPNLKR--DQIVPSNIAKIKVIGVGGGGCNAVNRMIASGVTGIDFWAINTDS- 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19 SPSPVTPSPTLKELIEELV--NITQNQ------ASLCNGSMVWSVNLTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11.3%; Score 75; DB 1; Length 430; 26.4%; Pred. No. 3.5; ive 19; Mismatches 31; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interpro; IPR003008; -.
Pfam; PF00091; tubulin; 1.
PRINTS; PR00423; CELLDVISFTSZ.
PROSITE; PS01134; FTSZ_1; 1.
PROSITE; PS01135; FTSZ_2; 1.
Cell division; Septation; GTP-binding.
NP_BIND 159 167 GTP (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 MYCAALESLINVSDCSAIQRTQRMLKAL-CSQKPAAGQISSERSRD 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  064105; Q63996;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=95178553; PubMed=7873607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D90906; BAA17496.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 20.
Loc 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000158; -. InterPro; IPR003008; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPRE_MOUSE
                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPRE_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              용
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lbs.sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Α.,
                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118 LAEVNNYWALNLIS-MLCLTSGTLNAFQDSPGLSKTVVNISSLCALQPYKGWGLYCAGKA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46 LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG---QISSER 102
Ota A., Ichinose H., Nagatsu T.; "Mouse sepiapterin reductase: an enzyme involved in the final step of tetrahydrobiopterin biosynthesis. Primary structure deduced from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62 LKVVLAAADLGTEAGVQRLLSAVRELPRPEGLQRLLLINNAATLGDVSKGFLNVN----D 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
                                                                                                                                                                                                                                                                                                                                                                                'Cloning of mouse sepiapterin reductase gene and characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5 LTVVIALTCLGGLAS ------PSP-----VTPSPTLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 209-261 FROM N.A.
MEDLINE=94136218; PubMed=8304109;
Maier J., Schott K., Werner T., Bacher A., Ziegler I.;
Maier Diot analysis of sepiapterin reductase mRNA in mammalian cell lines and tissues.";
Adv. Exp. Med. Biol. 338:195-198(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sepiapterin reductase reveals its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Huber R.;
"The 1.25-A crystal structure of sepiapterin reductase reveals its binding mode to pterins and brain neurotransmitters.";
EMBO J. 16:7219-7230(1997).
-I- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
                                                                                                                                                                                                                                                                                                             Lee S.W., Park I.Y., Hahn Y., Lee J.E., Seong C.S., Chung J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Auerbach G., Herrmann A., Gutlich M., Fischer M., Jacob U.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11.2%; Score 74; DB 1; Length 261; 22.2%; Pred. No. 2.5; ive 27; Mismatches 55; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PTERIN BINDING (POTENTIAL).
D -> G (IN REF. 2).
102294E439CB8AEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NADP (BY SIMILARITY)
                                                                                                                                     Biochim. Biophys. Acta 1260:320-322(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                   its promoter region.";
Biochim. Biophys. Acta 1445:165-171(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (1.25 ANGSTROMS).
MEDLINE=98070299; PubMed=9405351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; S71375; -; NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                      MEDLINE=99227131; PubMed=10209270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; S77493; AAB33611.1; -.
EMBL; U78077; AAC69364.1; -.
EMBL; U78076; AAC69364.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27883 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00106; adh_short; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDB: 13EP: 13-JAN-99.
PDB: 10AA: 16-FEB-99.
PDB: 1NAS: 3D-0ARK-99.
MGD: MGI:103078; Spr.
InterPro: IPR002198; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oxidoreductase; NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                              SEQUENCE FROM N.A.
```

; 9

ဖ

```
: | | : | : | : | 177 ARDMLYQVLAVEEPSVRVLSYAPG 200
                                                                                           UBF2_XENLA
P25980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA_BIND
DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA_BIND
DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG---QISSER 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118 LAEVNNYWALNLTS-MLCLTTGTLNAFSNSPGLSKTVVNISSLCALQPFKGWGLYCAGKA 176
                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 LQVVLAAADLGTESGVQQLLSAVRELPRPERLQRLLLINNAGTLGDVSKGFLNIN----D 117
                                                                                                                                                                                                                                                                                                                                                                         "Isolation and expression of rat liver sepiapterin reductase cDNA.";
Proc. Natl. Acad. Sci. U.S.A. 87:6436-6440(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTVVIALTCLG-----GLASPSPVTPSP------TLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                           Citron B.A., Milstien S., Gutierrez J.C., Levine R.A., Yanak B.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oyama R., Katoh S., Sueoka T., Suzuki M., Ichinose H., Nagatsu T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The complete amino acid sequence of the mature form of rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.2%; Score 74; DB 1; Length 262; 23.6%; Pred. No. 2.5; ive 26; Mismatches 54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
EC992564A0334C61 CRC64;
                                                                                                                                     01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                        262 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR, AJULOV, 1020218; ...
InterPro; IPR002198; ...
Pfam; PF001106; adh_short; 1.
Oxidoreductase; NADP; Acetylation.
                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                          PRT;
                TISSUE=1,1ver;
MEDLINE=90349631; PubMed=2201030;
103 SRDTKIEVIQLVK---NLLTYVRG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-91083647; PubMed-2260974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103 SRDTKIEVIQLVK---NLLTYVRG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33 P
28128 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M36410; AAA42130.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 23.0.
Loca 34; Conservative
                                                                                                          STANDARD;
                                                                                                                                                                                                                    Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; A36400; A36400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262 AA;
                                                                                                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                            Kaufman S.;
                                                                                                        SPRE_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ritani
                                                                                                                        P18297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46
                                                                                                        a
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=91348289; PubMed=1879565;
Bachvarov D., Normandeau M., Moss T.;
"Heterogeneity in the Xenopus ribosomal transcription factor xUBF has
a molecular basis distinct from that in mammals.";
FEBS Lett. 288:55-59(1991).
                                                                                01-MAY-1992 (Rel. 22, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
NUCLEOLAR TRANSCRIPTION FACTOR 2 (UPSTREAM BINDING FACTOR-2) (UBF-2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA-binding; Activator; Nuclear protein;
                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=91293106; PubMed=2065665; Reeder R.H.; McStay B., Hu C.H., Pikaard C.S., Reeder R.H.; "VuBE and Rib 1 are both required for formation of a stable polymerase I promoter complex in X. laevis."; EMBO J. 10:2297-2303(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HMG BOX 1.
HMG BOX 3.
HMG BOX 4.
HMG BOX 4.
HMG BOX 5.
ASP/GLU-RICH (ACIDIC).
Q -> H (IN REF. 2).
V -> A (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H (IN REF. 2).
A (IN REF. 2).
  A
  701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBCELLULAR LOCATION: NUCLEAR. SIMILARITY: CONTAINS 5 HMG BOXES.
                                                                                                                                                                                            Xenopus laevis (African clawed frog).
                                                01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X57561; CAA40794.1; -. EMBL; X59863; CAA42523.1; -. PIR; S16329; S16329.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00505; HMG_box; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transcription regulation; Multigene family; Repeat.
  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
264
362
489
701
32
538
                                                                                                                                                                                                                                                                            Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000910;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR; S17196; S17196
PIR; S17977; S17977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                      NCBI_TaxID=8355;
                                                                          01-MAY-1992
15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
HIDDON REAL THE THE THE TENENT TH
```

us-09-451-527-92.rsp

FT

g

ð q ò

```
------NGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCS----QKPAAG
                                                                                                                                                                                                                                                                          211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                             : | | : | | : | | 899
                                                                                                97 QISSE---RSRDTKIEVIQLVKNL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112
: 22059 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    211 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                             Sus scrofa (Pig).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                         HISTONE HIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACRO_RABIT
P48038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                         11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACRO_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                   9
                                                                                                                                            q
                                                                                                                                                                                                                                                                        SETT MEN WERE STANDED TO SETT MEN WERE SETT MEN WER SETT MEN WERE SETT MEN WER WERE SETT MEN WERE SETT MEN WERE SETT MEN WERE SETT MEN WERE SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
FHL/FH2 DOMAINS-CONTAINING PROTEIN (FORMIN HOMOLOGUE OVEREXPRESSED IN SPLEEN) (FHOS).
                                                                                                                                                                                                                      61 MYCAALESLINVSDCSAIQRTQRMLKALCSQ-----KPAAGQISSERSRDTKIEVI 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 VIALTCLGGLASPSPV------47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDIAGE 10352228; MESTENDENT J.J., MERIAGE R., Hiebert S.W.; Mestendorf J.J., Mernaugh R., Hiebert S.W.; "Identification and characterization of a protein containing formin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapions (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -I- SUBCELLULAR LOCATION: CYTOPLASMIC; PREDOMINANTLY.
-I- TISSUE SPECIFICITY: UBIQUITOUS. HIGHLY EXPRESSED IN SPLEEN.
-I- SIMILARITY: CONTAINS I FORMIN HOMOLOGY I (FHI) DOMAIN.
-I- SIMILARITY: CONTAINS I FORMIN HOMOLOGY Z (FH2) DOMAIN.
-I- SIMILARITY: BELONGS TO THE FORMIN HOMOLOGY FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.0%; Score 73; DB 1; Length 1164;
.larity 26.4%; Pred. No. 18;
Conservative 18; Mismatches 42; Indels 4
                                                                                                  1; Length 701;
                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1BC6ABE3E2E70CB2 CRC64;
D -> E (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COILED COIL (POTENTIAL).
POLY-PRO.
POLY-PRO.
                                                                                                                                            14;
                                                                                                                      9.8;
                                                                                             11.0%; Score 73; DB 31.8%; Pred. No. 9.8; ive 15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FH1 (PRO-RICH)
FH2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLY-GLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MM;
669 D
82014 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF113615; AAD39906.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       homology (FH1/FH2) domains.";
Gene 232:173-182(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126496
                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         621
1069
921
593
605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR003104; - Pfam; PF02181; FH2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
  669
701 AA;
                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       487
594
884
583
597
996
1164
                                                                                                                                                                                                                                                                                                                    : ::||
360 RFLENL 365
                                                                                                                                                                                                                                                                                      112 QLVKNL 117
                                                                                                                                          21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Coiled coil
                                                                                                                                                                                                                                                                                                                                                                                                                                                            FHOS_HUMAN
  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
SEQUENCE
                                                                                                  Query Match
                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9Y613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
FHOS_HUMAN
                                                                                                                                            Matches
```

ò

```
-!- SUBCELLULAR LOCATION: NUCLEAR.
-!- DEVELOPMENTAL STAGE: THIS HISTONE IS A TESTIS-SPECIFIC HI VARIANT
THAT APPEARS DURING MEIOSIS IN SPERMATOGENESIS.
-!- SIMILARITY: BELONGS TO THE HISTONE HI/H5 FAMILY.
PIR; A02581; HSPOIT.
HSSP; P08287; 1GHC.
                                                       875
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001386; -.
Pfam; PF00538; linker_histone; 1.
Chromosomal protein; Nuclear protein; DNA-binding; Multigene family;
Acerylation; Spermatogenesis; Testis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDINE-05054795; PubMed-6389534;
Cole K.D., York R.G., Kistler W.S.;
"The amino acid sequence of boar Hlt, a testis-specific Hl histone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLV-KNLLTYVRGVYRHGNFR 131
                                                       825 LAVGNFLNGSQ-----SSGFELSYLE---KVSDVKDTVRRQSLLHHLCSLVLQTRPESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metázoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
NCBL_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          variant.";
J. Biol. Chem. 259:13695-13702(1984).
-!- FUNCTION: HISTONES HI ARE NECESSARY FOR THE CONDENSATION NUCLEOSOME CHAINS INTO HIGHER ORDER STRUCTURES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.9%; Score 72; DB 1; Length 211; 25.6%; Pred. No. 3.1; ive 16; Mismatches 33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACETYLATION.
GLOBULAR.
FACA47C51A8F5364 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                01-JAN-1988 (Rel. 06, Created)
01-JAN-1988 (Rel. 06, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
ACROSIN PRECURSOR (EC 3.4.21.10)
                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA
```

., ,

œ

```
KDA MEMBRANE ANTIGEN PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                          CLEAVAGE ARG-XAA >> LYS-LYS >> LYS-XAA.

CLEAVAGE ARG-XAA >> LYS-LYS >> LYS-XAA.

SUBUNIT: HEAVY CHAIN (CATALYTIC) AND A LIGHT CHAIN LINKED BY TWO
       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10 ALTCL---GGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAAL 66
                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
CHARGE BELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
                                                                                                                             SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1; ALSO KNOWN AS THE TRYPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                   Hydrolase; Serine protease; Glycoprotein; Zymogen; Sperm; Signal.
SIGNAL 1 16 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                     ACROSIN.
ACROSIN LIGHT CHAIN (BY SIMILARITY).
ACROSIN HEAVY CHAIN (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10.9%; Score 72; DB 1; Length 431; 32.3%; Pred. No. 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 7;
8; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                           INTERCHAIN (BY SIMILARITY). INTERCHAIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
STRAIN-NEW ZEALAND WHITE; TISSUE-Testis;
                                                                                                                                                                                                                                                                            Pfam: PF00089; Lrypsin; 1.
PRONTS: PRO0722; CHYMOTRPEIN.
PROSITE: PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_SER; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequ
30-MAX-2000 (Rel. 39, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46422 MW;
                                                                                                                                                                                                                                        EMBL; U05204; AAA61630.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 32.37
Matches 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                          InterPro; IPR001254; -. InterPro; IPR001314; -.
                                                                                                                                                                                                                                                                                                                                                                 431
152
160
87
244
                                                                                                                         DISULFIDE BONDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       238
431 AA;
                                                                                                                                                                                                                                                   MEROPS; S01.223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          227 PS 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPAC_SHIFL P18012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ES 68
                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                  PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
IPAC_SHIFL
                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DT PT
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Infect. Immun. 57:2364-2371(1989).
-!- FUNCTION: ASSOCIATED WITH THE ENTRY OF THE BACTERIA INTO COLONIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=M90T / SEROTYPE 5;
MEDLINE=89200844; PubMed=3071655;
Baudry B., Kaczorek M., Sansonetti P.J.;
"Nucleotide sequence of the invasion plasmid antigen B and C genes (ipaB and ipaC) of Shigalla flexneri.";
Microb. Pathog. 4:345-357(1988).
                                                                                                                                                                                                           STRAIN=M90T / SEROTYPE 5;
MEDLINE=89057927; PubMed=3057506;
Venkatesan M.M., Buysse J.M., Kopecko D.J.;
"Characterization of invasion plasmid antigen genes (ipaBCD) from Shigella flexneri.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MISCELLANEOUS: SYNTHESIS OF THIS IMMUNOGEN IS REPRESSED AT 30 DEGREES CELSIUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sankaran K., Ramachandran V., Subrahmanyam Y.V.B.K., Rajarathnam
                              and Plasmid 230 kb pMYSH6000. subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=2A; PLASMID=230 kb pMYSH6000;
MEDLINE=90014179; Pubmed=2552264;
Sasakawa C., Adler B., Tobe T., Okada N., Nagai S., Komatsu K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Elango S., Roy R.K.; "Congo red-mediated regulation of levels of Shigella flexneri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Functional organization and nucleotide sequence of virulence Region-2 on the large virulence plasmid in Shigella flexneri 2 Mol. Microbiol. 3:1191-1201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30 T -> I (IN REF. 3).
372 A -> T (IN REF. 3).
41038 MW; ED6481B161E58EB1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42 KDA MEMBRANE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                             Proc. Natl. Acad. Sci. U.S.A. 85:9317-9321(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Antigen; Plasmid; Virulence; Membrane; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10.8%; Score 71.5; Di
22.0%; Pred. No. 6.8;
tive 26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PARTIAL SEQUENCE OF 20-64 AND 318-335.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL, J04117; AAA26523.1; --.
EMBL, M34849; AAA98425.1; ALT_INIT.
EMBL, X15319; CAA33382.1; -.
PIR; A60112; A60112.
Shigella flexneri.
Plasmid 210 kb invasion pWR100,
Bacteria; Proteobacteria; gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=89307550; PubMed=2663721
                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN=M90T / SEROTYPE 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EPITHELIAL CELLS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             membrane proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            372 3
382 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                              Shigella.
NCBI_TaxID=623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            roshikawa M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
```

4

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ichinose H., Katch S., Suecka T., Titani K., Fujita K., Nagatsu T.; "Cloning and sequencing of cDNA encoding human sepiapterin reductase -- an enzyme involved in tetrahydrobiopterin biosynthesis."; Biochem. Biophys. Res. Commun. 179:183-189(1991).
-!- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRAHYDROBIOPTERIN BIOSYNTHESIS TO FORM 5.6,7,8-TETRAHYDROBIOPTERIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104 LGDVSKGFVDLSDSTQVNNYWALNLTS-MLCLTSSVLKAFPDSPGLNRTVVNISSLCALQ 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36 LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 92
                            : | : : | | : : | | 370
72 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 129
                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: CYTOPLASMIC.
DISEASE: DEPRESSED SYNTHESIS OF TETRAHYDROBIOPTERIN MAY PLAY
ROLE IN A VARIETY OF HUMAN DISEASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACETYLATION (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
9C9BF76212826F47 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163 PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93 PAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG 123
                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
(EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 10.7%; Score 71; DB 1
Best Local Similarity 24.7%; Pred. No. 4.9;
Matches 24; Conservative 21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      192 AA
                                                                                                                                                                                261 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-91354248; PubMed-1883349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Interpro, IPR002198, -... Pfam; PF00106; adh_short; 1.
Oxidoreductase; NADP; Acetylation.
                                                                                                                                                                                                                             01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last seq
01-0CT-2000 (Rel. 40, Last anno
SEPIAPTERIN REDUCTASE (EC 1.1.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FLHC_SALTY STANDARD; 052222; 30-MAY-2000 (Rel. 39, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32 P
28048 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M76231; AAA60314.1; -.
                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SUBUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; JQ1176; JQ1176.
MIM; 182125; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Liver;
                                                                                                                                                                             SPRE_HUMAN
P35270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NADPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOD_RES
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
FLHC_SALTY
ID FLHC_S/
AC 05222
DT 30-MAY
                                                                                                                           SPRE_HUMAN
SPRE_HUMAN
SPRE_HUMAN
DF P35270
DT 01-FEB
DT 01-FEB
DT 01-FEB
DT 01-OCT
DE SEPTAF
SON HOMO S
ON                                                   324
ò
                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yanagihara S., Iyoda S., Ohnishi K., Iino T., Kutsukake K.; "Structure and transcriptional control of the flagellar master operon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of Salmonella typhimurium.";
Genes Genet. Syst. 74:105-111(1999).
-!- FUNCTION: TRANSCRIPTIONAL ACTIVATOR. TOGETHER WITH FLHD IT ACTS A:
A COMPOUND SIGMA FACTOR THAT ACTIVATE CLASS 2 FLAGELLAR GENES (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transcription regulation; Sigma factor; DNA-directed RNA polymerase; DNA-binding; Flagella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 MVWSVNLTAGMYCAALESLINVSDCS---AIQRTQRMLKALCSQKPAAGQISSERS 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Salmonella typhimurium.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Salmonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 10.6%; Score 70.5; DB 1; Length 192; Best Local Similarity 28.6%; Pred. No. 3.9; Matches 16; Conservative 10; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                         Toguchi A., Harshey R.M.;
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21579 MW; C7334C691ECE3F8D CRC64;
30-MAY-2000 (Rel. 39, Last sequence update) 01-OCT-2000 (Rel. 40, Last annotation update) FLAGELLAR TRANSCRIPTIONAL ACTIVATOR FLHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE FLHC FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF029300; AAB96640.1; -.
EMBL; D43640; BAA85315.1; -.
StyGene; SG10643; flhC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA-binding; Flager
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=10586519;
                                                                                                                                                                                                                                                    NCBI_TaxID=602;
                                                                                                                                                                                                                                                                                                                                                         STRAIN-LT2;
```

Search completed: May 14, 2001, 06:02:04 Job time: 43361 sec

ij

Q9m3h8 cicer ariet

```
089048 vestcular s
089144 arabidopsis
090937 trypanosoma
0900415 caenorhabdi
095810 homo sapien
094561 enterococcu
094561 enterococcu
         Q98780 vesicular s
Q98787 vesicular s
Q98789 vesicular s
Q18412 drosophila
Q18481 fugu rubrip
Q91wi4 crimean-con
                                                                                                                                         Q61003 mus musculu
049529 arabidopsis
09raby rickettsia
09pcz0 xylelia
036414 alcelaphine
                                                                                                                                                                                                      Q9vwl7 drosophila
Q9vuh6 drosophila
Q9ubbl homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVMSVNLTAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

Yang S., Boroughs K.L., McDermott M.J.;

Yang S., Boroughs K.L., McDermott M.J.;

"Canine Interleukin-13: Molecular Cloning of Full-Length cDNA and
Expression of Blologically Active Recombinant Protein.";

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF244915; AAF63204.1;

SEQUENCE 131 AA; 14268 MW; 9A142B4D0F80370F CRC64;
                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
NCBI_TaxID=9615;
                                                                                                                                                                                      019522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 663; DB 6; Length 131; 100.0%; Pred. No. 1.3e-61; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114 AA
                                                                                                                                                                                                                                                                                             131 AA
                                                                                                                                                                                                                                                   ALIGNMENTS
Q9M3H8
Q98780
Q98787
Q98789
O18412
Q918E1
Q91WI4
Q9VX92
                                                                                                                                                                                                                                                                                                               Created)
                                                                     Q89048
Q9SIX4
Q9N937
                                                                                               Q9NEIS
095810
014134
09X561
09NV02
061003
049529
09RAB9
                                                                                                                                                                                             Q98778
Q9VWL7
                                                                                                                                                                            036414
                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                            01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15,
  11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 100.
Best Local Similarity 100.
Matches 131; Conservative
                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
  438
150
150
150
718
1596
1596
1510
274
925
                                                                                               424
425
1057
209
                                                                                                                                  431
665
1026
475
494
2606
2761
150
1063
1790
                                                                                                                                                                                                                                                                                                                                                Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 VRGVYRHGNFR 131
 INTERLEUKIN-13
:6M0N60
                                                                                                                                                                                                                                                                                            09N0W9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9TV84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09TV84
ID 09
6MON60
                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              090dc7 homo sapien
028609 oryctolagus
094918 homo sapien
09p0h7 homo sapien
P97536 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09y613 homo sapien
045657 caenorhabdi
09p712 schizosacch
09n9c4 leishmania
098791 vesicular s
                                                          May 13, 2001, 17:48:37; Search time 133.94 Seconds (without alignments) 114.635 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9p3al neurospora
Q98779 vesicular s
Q9q8p4 myxoma viru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9smd4 lycopersico
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9n946 trypanosoma
Q9n949 trypanosoma
Q9mum4 mesostigma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9n0w9 canis famil
Q9tv84 bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bos taurus
homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                              MALWLTVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                            374700
         4.5
Compugen Ltd
                                                                                                                                                                           hits satisfying chosen parameters:
                                                                                                                                                           374700 seqs, 117207915 residues
         GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                           - protein search, using sw model
                                                                                                                                                                                                                                       Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9POH7
P97536
Q9N946
Q9N949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           098779
098779
090884
097613
045657
09971.2
098791
                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9MUM4
Q9SMD4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9UDC7
Q28609
O94918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9N0W9
Q9TV84
                                                                                                                                                                                                                                                                                                                                                             sp_unclassified:*
                                                                                                                                                                                                                                                                                                   sp_invertebrate:*
sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                        sp_vertebrate:*
                                                                                                                                                                                                                      Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                             sp_organelle:*
                                                                                         US-09-451-527-92
663
                                                                                                                                                                                                                                                                 sp_archea:*
sp_bacteria:*
                                                                                                                                                                                             seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                             sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                sp_virus:*
                                                                                                                                                                                                                                                                                   sp_fungi:*
sp_human:*
                                                                                                                                                                                                                                                         SPTREMBL_15:*
                                                                                                                                                                                                                                                                                                                                        sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
11183
11230
1448
1448
14183
336
1150
11804
1200
1200
1200
                                                                                                                                                                                                                                                                                                                      sp_mhc:*
```

Q98778 vesicular s

homo sapien

caenorhabdi

οţ

Total number Minimum DB Maximum DB

Database

Searched:

Perfect score:

Title:

Sequence:

OM protein

Run on:

Scoring table:

ö

Gaps

ö

563 157.5 182.5 182.5 78.5 78.5 78.5 73.7 73.5 73.5 73.7

28 44 7 111 111 112 113 114 118 118

Score

. 9

Result

```
"Cloning and sequencing of cDNAs for rabbit preproacrosin and a novel preproacrosin-related cDNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nagase T., Ishikawa K., Suyama M., Kikuno R., Hirosawa M., Miyaljima N., Tanaka A., Kotani H., Nomura N., Ohara O.; "Prediction of the coding sequences of unidentified human genes. XII. The complete sequences of 100 new cDNA clones from brain which code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10 ALTCL---GGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAAL 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                             Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1183 AA; 130962 MW; 1FE0EE56C0DFFE3A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSPERMINOGEN,
8FC2467414069C61 CRC64;
                                                    01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
PUTATIVE PREPROSPERMINOGEN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-1999 (TrEMBLrel. 10, Created)
1-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
KIAA0829 PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12.4%; Score 82.5; DB 6; 30.0%; Pred. No. 0.91; ative 12; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1183 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.8%; Score 78.5; D
31.0%; Pred. No. 12;
ive 19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochim. Biophys. Acta 1219:215-218(1994).
EMBL; U05203; AAA61629.1; -.
HSSP; P00734; 2HNT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PFAM; PF00089; trypsin; 1.
PROSITE; PS00134; TRYPSIN_HIS; UNKNOWN_1.
                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=NMW ZEALAND WHITE; TISSUE=TESTIS;
MEDILINE=94168861; Pubmed=8084168;
Richardson R.T., O'Rand M.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=BRAIN;
MEDLINE=99156230; PubMed=10048485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 16 PC
17 275 PF
275 AA; 29965 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         large proteins in vitro.";
Res. 5:355-364(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA Res. 5:335-364(1998).

EMBL, AB020636; BAA74852.1; -.

NON_TER

SEQUENCE 1183 AA; 130962 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    227 PS-GKIDTCQRLQQLVEVLK 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67 ESLINVSDCSAIQRTQRMLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 31.0°
Matches 39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                           01-NOV-1996 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INTERPRO; IPR001254; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                   NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KIAA0829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 094918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
094918
AC OCC OCC OCT BEAN REPRETED BY THE REPRETED B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                     Bos taurus (Bovine).
Subraryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=93027259; PubMed=1408833; Morgan J.G., Dolganov G.M., Robbins S.E., Hinton L.M., Lovett M.; Morgan J.G., Dolganov G.M., Robbins S.E., Hinton L.M., Lovett M.; The selective isolation of novel cDNAs encoded by the regions surrounding the human interleukin 4 and 5 genes."; Nucleic Acids Res. 20:5173-5179(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (Human).
Eukaryota, Metazoa, Chordata, Craniata; Vertebrata, Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 SMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSEYVRDTKIEVAQ 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60.1%; Score 398.5; DB 6; Length 114; 71.7%; Pred. No. 4e-34; Live 10; Mismatches 21; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 157.5; DB 4; Length 49; Pred. No. 2e-09; 1; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                             Trigona W.T., Hirano A., Brown W.; "Biological activities of interleukin-13 (IL-13) on bovine lymphocytes: implications for signaling through IL-13Ral."; Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases. EMBL, AF072807; AAD22748.1; -- HSSP; P35225; 3ITR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114 AA; 12355 MW; D8CC56E5627D030A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5109 MW; 679CD23A190C778E CRC64;
                     01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
INTERLEGKIN-13 PRECURSOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INTERPRO; IPRO01325; -.
PROSTTE; PS00838; INTERLEUKIN_4_13; UNKNOMN_1.
114 114
SEQUENCE 114 AA; 12355 WW; D8CC56E5627D0302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 23.8%;
Best Local Similarity 71.4%;
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-OCT-2000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 71.7%;
Matches 81; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P600 HOMOLOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P35225;
SEQUENCE 49
```

09UDC7; **090DC7** 

g

ò

g

ò

RESULT
O99UDC7
1D 009
AC 009
DT 011
DD 011
D

Gaps

6

Indels

35;

Length 275;

ņ

Gaps

17;

Indels

51;

¥.

028609

RESULT 028609 QI

ð g Length 1183;

DB 4;

.. 2

17; Gaps

22

ò g à Db

```
NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                                                                                                                                                                                                                                                                                                 65 ALESL--INVSDC-----SAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVK 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHR1.19.
Trypanosoma brucei.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13 CLGGLASPSPVTPSPTLKELIEELVNITQNQA--SLCNGSMVWSVNL-----TAGMYCA
                                                                                  "Molecular cloning of a novel 120-kDa TBP-interacting protein.";
Biochem. Biophys. Res. Commun. 229:612-617(1996).
EMBL; D87671; BAA13432.1; -.
SEQUENCE 1230 AA; 136360 MW; A3ACF0E99B99A1D7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-TREU927;
Hall N., Bowman S., Quail M., Ivens A.C., Kay M.P., Bray-Allen Lennard N.J., Clark L.N., Harris B.R., Melville S., Lawson D., Gerrard C., Rajandream M.A., Barrell B.G.;
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AL359782; CAB95333.1;
SEQUENCE 1448 AA; 160479 WW; 688B26228AD2046B CRC64;
                                   MEDLINE-97127450; PubMed-8954946;
Yogosawa S., Makino Y., Yoshida T., Kishimoto T., Muramatsu M.,
                                                                                                                                                                                           DB 11; Length 1230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11.5%; Score 76; DB 5; Length 1448; 29.0%; Pred. No. 28; tive 18; Mismatches 34; Indels
                                                                                                                                                                                        Query Match
11.8%; Score 78.5; DB 11; Length
Best Local Similarity 31.0%; Pred. No. 13;
Matches 39; Conservative 19; Mismatches 51; Indels
                                                                                                                                                                                                                                                           LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last.sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
POSSIBLE PUTATIVE ADENYLATE CYCLASE REGULATORY PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT; 1448 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1448 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09N949;
01-OCT-2000 (TrEMBLrel. 15, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 36; Conserv
                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                113 LVKNLL 118
                                                                                                                                                                                                                                                                                                                                                                                                                       LVRSPL 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ||:|
NLVT 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   116 NLLT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9N946;
                                                                        Tamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9N946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9N949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    658
                                                                                                                                                                                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
Q9N946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9N949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Эþ
   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC PT
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
                                                                                       Rattus norvegicus (Rat).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID-10116;
LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV-----WSV 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV-----WSV 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
:
                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Huang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      χn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4; Length 1230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-ADRENAL GLAND:
Ren S., Shi J., Huang C., Jiang C., Li Y., Zhou J., Yu Y.,
Wang Y., Fu G., Chen Z., Han Z.;
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

TISSUE-ADRENAL GLAND;

TO S., Li Y., Wu T., Gu Y., Zhang L., Jiang C.,

Han Z., Fu G., Chen Z., Wang Y.;

"A novel gene expressed in the human adrenal gland.";

Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AF157326; AAF67492.1; -
SEQUENCE 1230 AA: 136360 MW; A3ACF0E99B99A1D7 CRC64;
                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11.8%; Sco._
31.0%; Pred. No. 15,
"no. 19; Mismatches
""-1TQ"
                                                                                                                                                                                                                                                           PRT; 1230 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 1230 AA
                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                       01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, TIP120 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03,
03,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 31.0°
Matches 39; Conservative
                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Tremburel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                          | | | :: |
694 LVRSPL 699
                                                                                                                                   113 LVKNLL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  741. LVRSPL 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113 LVKNLL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-1997 (
01-MAY-1997 (
01-MAY-2000 (
TIP120.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P97536
P97536;
                                                                                                                                                                                                                                                         09P0H7
 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
```

g

ò g ò Q OC OC OC OC OC

7;

36;

s.

64

```
.
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18 LIQPNESTASLC-GAIIWLVALTAGIHWFYLNSILSIGAVTALISLGSQEYQRQRIISFL 246
                                                                                                                                                                                                                                                                                                                                           557 CLGNL------PQLKMLDLSGTN-TDNESLRSLCLSQTVVSLNLSHCWKMTNVSHIS 606
                                                       Trypanosoma brucei.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
NCBI_TaxID=5691;
                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36 LVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAI-----QRTQRMLKAL 88
                                                                                                                                                                                                                                                                                                               13 CLGGLASPSPVTPSPTLKELIEELVNITQNQA--SLCNGSMVWSVNL-----TAGMYCA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDILTRE-20150907; PubMed-10688199;
Lemideux C., Otis C., Turmel M.;
"Ancestral chloroplast genome in Mesostigma viride reveals an early
                                                                                                                                                                                                                                                                                                                                                                      65 ALESL--INVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119
                                                                                                                      20;
                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                                                                                                                                                                                                         5; Length 1448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.2%; Score 74; DB 8; Length 415; 28.4%; Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30; Indels
                                                                                                                                                                                                                                                                                     44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. Lemael M.; Lemaeux C., Otis C., Turmel M.; Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF166114; AAF43874.1; -.
01-OCT-2000 (TrEMBLrel. 15, Last sequence update).
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
POSSIBLE PUTATIVE ADENYLATE CYCLASE REGULATORY PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chloroplast.
Eukaryota; Viridiplantae; Chlorophyta; Prasinophyceae;
Chlorodenderales; Mesostigmataceae; Mesostigma.
NCBI_TaxID=41882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E35116E9692EC782 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Créated)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---NPWANPTSIG------YQLVQSLLAVGSG 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89 CSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRG 123
                                                                                                                                                                                                                                                        DB :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415 AA
                                                                                                                                                                                                                                                                                   15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 11;
18; Mismatches
                                                                                                                                                                                                                                                        11.3%; Score 75; 30.8%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               branch of green plant evolution."; Nature 403:649-652(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUTATIVE PLASTID DIVISION PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415 AA; 46813 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 28.4 Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-2000 (TrEMBLrel. 01-OCT-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                        Similarity
                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mesostigma viride.
                                                                                                                                                                                                                                                                        Best Local Sim
Matches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chloroplast
SEQUENCE
                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9MUM4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09MUM4
  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٠<u>.</u>
                                                                                                         Lycopersicon esculentum (Tomato).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids I;
Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                              tomato fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲
ک
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       4 WLTVVIALTCLGGLASPSPVTPSPTLKEL-IEEL----VNITQNQASLCNGSMVWSVN- 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----LTAGM---YCAALE-----SLINVSD-----CSAIQRTQRMLKALCS 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Holland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41;
                                                                                                                                                                                                                                                                                                                                                                                            41;
                                                                                                                                                                                                                                                                                                                                                                  Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. Schulte U., Aign V., Hoheisel J., Brandt P., Fartmann B., Nyakatura G., Mewes H.W., Mannhaupt G.; Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                STRAIN=CV. UC82B;
Kvarnheden A., Yao J.L., O'Brien I., Morris B.;
"Differential expression of three D3 cyclin genes during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Fungi; Ascomycota; Sordariales; Sordariaceae;
NCBI_TaxID-5141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           German Neurospora genome project;
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AL390354; CAB9375.1;
SEQUENCE S66 AA, 63411 WW; 2AA1F2E1F37DE3CE CRC64;
                                                                                                                                                                                                                                                                    Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases. EMBL; AJ002590; CAB60838.1; -. INTERPRO; IPR000553; -.
                                                                                                                                                                                                                                                                                                                           5BBA8F6DD0852031 CRC64
                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel. 15, Created)
(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 15, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                  DB 10;
                                                                                                                                                                                                                                                                                                                                                                                            54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91 QKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYR 126
                                                                                                                                                                                                                                                                                                                                                               11.1%; Score 73.5; Dilarity 23.7%; Pred. No. 9.9; Conservative 24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.1%; Score 73.5; 28.2%; Pred. No. 19;
                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                          PFAM; PF00134; cyclin; 1.
SEQUENCE 336 AA; 38687 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONSERVED HYPOTHETICAL PROTEIN
                                                 (TrEMBLrel. 13, C
(TrEMBLrel. 13, I
(TrEMBLrel. 14, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                         set and development.";
                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
nes 37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 35; Conserv
                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Neurospora crassa
                                                                                           CYCD3,3 PROTEIN
                                                  01-MAY-2000
                                                               01-MAY-2000
01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                     09SMD4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9P3A1;
                         Q9SMD4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9P3A1
                                                                                                                                                                                                                                                                                                                                                                                Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
RESULT
              Q9SMD4
                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
```

Ŋ

Š,

```
Search completed: May 14, 2001, 06:01:08
                                                                                                                                                                                                                                                                                                                                                                      Q9Y613;
                                                                                                                                                                                                                                                                                                                                                          Q9Y613
                                                                                                                                                                                                                                                                                                                                    RESULT 15
                                                                                                                                                                                        56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48
                                                                                                                                                                                                                                                                                                                                                Q9Y613
셤
                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLILKGQVMTSDCSSSAKSQNSRQS--SESPSPSNSPEHASRASASPNLWDFKPTEVQLI 130
                                                                        -----QTDLYINSLLQYNPDALSIAAQMD 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR-----DTKIEVIQLV 114
                                                  ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKP----AAGQIS 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14 PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myxoma virus.
Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
Leporipoxvirus.
          ----PVTPSPTLKELIEELVNITQNQ
                     ||||| | : ||| | ::|| WITVATAIGICLGAALSTPSTEDIKLPKENCPLTNVLFPVLPCGSFK--LEE-ATIDDMQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30;
                                                                                                                                                                                                                                                                                                                    MEDITER=97075113; pubMed=8917539;
Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the
evolution of vestcular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=LAUSANNE;
MEDLINE=20032073; PubMed=10562494;
Cameron C., Hota-Mitchell S., Chen L., Barrett J., Cao J.X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.0%; Score 73; DB 14; Length 150; ilarity 24.2%; Pred. No. 4.5; Conservative 19; Mismatches 42; Indels
                                                                                                                                                                                                                                                    Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
NCBL_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                    16D11C4E8E8A65E7 CRC64;
                                                                                                                                                                                             01-FEB-1997 (TrEMBLrel. 02, Created)
01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
PHOSPHOPPROTEIN (FRAGMENT).
Vesicular stomatitis virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                          150 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      350 AA
        WLTVVIAL-TCLG-GLASPS-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                        66 AAMNNGSLT-SVOLVG---CYVLRTF----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                 PFAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                      150
:: 16711 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 13, 1
(TrEMBLrel. 13, 1
(TrEMBLrel. 13, 1
                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                        INTERPRO; IPR000224;
                                                                                                                                                                                                                                                                                                                                                                                                                                    150 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10273;
                                                                                                                                                                                                                                                                                                             STRAIN-0888CRB
                                                                                              100 SERS 103
                                                                                                                   112 AERA 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (
01-MAY-2000 (
01-MAY-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                        Q98779
Q98779;
                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9Q8P4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q908P4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
Q9Q8P4
                            σ
                                                   44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                    RESULT
098779
                         Db
                                                  õ
                                                                       g
                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
```

```
104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57 ----LTAGMY--CAALESLINVSDCSAIQRTQRMLKAL-----CSQKPAAGQISSERSRD 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------NGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCS----QKPAAG 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE-9928252; PubMed=10352228;
Mestendorf J.J., Mernaugh R., Hiebert S.W.;
"Identification and characterization of a protein containing formin homology (FHI/FH2) domains.";
EMBL; AF113615; AAD39906.1;
SEQUENCE 1164 AA; 126496 MW; 1BCGABE3E2E70CB2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                         42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46;
                                                                                                          STRAIN-LAUSANNE;
Cameron C., Hota-Mitchell S., Chen L., Barrett J., Cao J.-X.,
Macaulay C., Willer D., Evans D., McFadden G.;
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
EMBL, AF170726; AAF14940.1;
SEQUENCE 350 AA; 39157 MW; 4D9CC2B04ACFCB7F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                SPTLKE---------LIEELVNITQNQASLCNGSMVWSVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4; Length 1164; 45;
                                                                                                                                                                                                                                                                                           Length 350;
                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. 12, Last sequence update) (TrEMBLrel. 14, Last annotation update)
                                                                                                                                                                                                                                                                                                                                37;
                                                                                                                                                                                                                                                                                       11.0%; Score 73; DB 14; 22.3%; Pred. No. 12; Live 22; Mismatches 37,
Macaulay C., Willer D., Evans D., McFadden G.; "The complete DNA sequence of myxoma virus."; Virology 264:298-318(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.0%; Score 73; DB 26.4%; Pred. No. 45; Live 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT; 1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2000 (TrembLrel. 14, Last annote FH1/FH2 DOMAIN-CONTAINING PROTEIN FHOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97 QISSE---RSRDTKIEVIQLVKNL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                876 DLYSEIPALTRCAKVDFEOLTENL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1999 (TrEMBLrel. 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 11.0°
Best Local Similarity 26.4°
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 VIALTCLGGLASPSPV----
                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106 TKIEVIQLVK 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163 MKYGLINLVQ 172
                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1999
```

۲;

Job time: 43951 sec

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
```

OM protein . protein search, using sw model

May 13, 2001, 17:47:33 ; Search time 79.9 Seconds (without alignments) 79.413 Million cell updates/sec Run on:

Title: Perfect score:

US-09-451-527-97 561 1 SPVTPSPFLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 111 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

390729 seqs, 57163235 residues Searched:

390729 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

•• Database

.DAT:\* /cgnl\_6/gcgdata/geneseq/geneseqp/AA1980.DAT:\*/cgnl\_8/gcgdata/geneseqy/geneseqp/AA1981.DAT:\*/cgnl\_8/gcgdata/geneseqy/geneseqp/AA1982.DAT:\*/cgnl\_8/gcgdata/geneseqy/geneseqp/AA1983.DAT:\*/cgnl\_8/gcgdata/geneseq/geneseqp/AA1983.DAT:\*/cgnl\_8/gcgdata/geneseq/geneseqp/AA1983.DAT:\* /cgnl\_8/gcgdata/genescq/genescqp/AA1985.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1986.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1987.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1987.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1989.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1989.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1999.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1999.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1999.DAT:\*/cgnl\_8/gcgdata/genescq/genescqp/AA1999.DAT:\*/ A\_Geneseq\_0401:\*

.DAT:\* .DAT:\* 'gcgdata/geneseq/geneseqp/AA1996.DAT:\* DAT: \* /cgnl\_8/gcgdata/geneseg/genesegp/AA1992. cgnl\_8/gcgdata/genesegp/genseagp/AA1993. /cgnl\_8/gcgdata/genesegp/AA1994. /cgnl\_8/gcgdata/genesegp/AA1995. /cgn1\_8/gcgdata/geneseq/geneseqp/AA1997 /cgn1\_8/

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. /cgn1\_8/gcgdata/geneseq/geneseqp/AA2001.DAT:\*

/gcgdata/geneseq/geneseqp/AA2000.DAT:\*

/cgn1\_8/gcgdata/geneseq/geneseqp/AA1999. /cgn1\_8/gcgdata/geneseq/geneseqp/AA2000. /cgn1\_8/gcgdata/geneseq/geneseqp/AA1998

# SUMMARIES

|            | •      | Description     | Canine mature inte | Canine interleukin | Canine mature inte | Canine interleukin | Protein with cytok | Human interleukin- | Sequence of human | Protein with cytok | Cytokine NC30. R | Human interleukin- | Sequence of mouse |
|------------|--------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|------------------|--------------------|-------------------|
|            |        | ID              | Y58222             | Y58221             | Y58224             | Y58223             | R27347             | R92793             | R48624            | R27346             | R27348           | R92794             | R48625            |
|            |        | DB              | 21                 | 21                 | 21                 | 21                 | 13                 | 17                 | 15                | 13                 | 13               | 17                 | 12                |
|            |        | Match Length DB | 111                | 131                | 110                | 130                | 112                | 112                | 132               | 112                | 146              | 111                | 131               |
| <b>s</b> p | Query  | Match           | 100.0              | 100.0              | 97.2               | 97.2               | 68.2               | 68.2               | 68.2              | 6.99               | 6.99             | 65.4               | 52.7              |
|            |        | Score           | 561                | 561                | 545.5              | 545.5              | 382.5              | 382.5              | 382.5             | 375.5              | 375.5            | 367                | 295.5             |
|            | Result | NO.             | Н                  | 2                  | æ                  | 4                  | വ                  | 9                  | 7                 | 80                 | 6                | 10                 | 11                |

| Murine P600. Mus | inter  |        | sulfite | dopsis t | Arabidopsis thalia | $\neg$ | HIV-1-NC7 envelope | Alternative versio | Tobacco mosaic vir | Protein sequence o | Wild type viral mo | Alternative versio | TMV replicon-encod | Protein encoded by | Human heparin-bind | Human prostate can | ß      |        | Ø      | Ø      |        |        |        | Rice sulfite reduc | Moraxella catarrha | Moraxella catarrha | Arabidopsis thalia | Arabidopsis thalia | 13     | Human secreted pro | Human colon cancer | Baculovirus RNA ba |
|------------------|--------|--------|---------|----------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|
| R92795<br>Y84919 | Y49702 | B44998 | Y58998  | G06262   | G06261             | W62025 | W30640             | Y71919             | R78388             | W71250             | Y71917             | Y71920             | R56447             | W71249             | Y21548             | B63822             | 630635 | G45468 | G30634 | G30633 | G55503 | G55502 | G55501 | Y58996             | Y95988             | Y95987             | G45673             | G45672             | G45671 | W64468             | m                  | B35513             |
| 17               | 20     | 21     | 21      | 21       | 21                 | 19     | 20                 | 22                 | 16                 | 19                 | 22                 | 22                 | 15                 | 19                 | 20                 | 22                 | 21     | 21     | 21     | 21     | 21     | 21     | 21     | 21                 | 21                 | 21                 | 21                 | 21                 | 21     | 19                 | 21                 | 21                 |
| 111              | 21     | 279    | 286     | 330      | 407                | 482    | 2404               | 267                | 268                | 268                | 268                | 268                | 472                | 485                | 634                | 229                | 299    | 299    | 312    | 357    | 514    | 602    | 620    | 673                | 889                | 919                | · 1032             | 1045               | 1090   | 1461               | 101                | 168                |
| 52.1             | 11.9   | 11.7   | 11.7    | 11.7     | 11.7               | 11.6   |                    |                    | •                  | ٠                  |                    | ٠                  | •                  | •                  |                    | •                  |        |        |        | •      |        | ٠      | ٠      |                    |                    |                    | ٠                  | •                  | 11.3   |                    | •                  | 11.2               |
| 292.5            | LO.    | ς.     | δ.      | 65.5     | δ.                 | 65     | 65                 | 4                  | 4.                 | 4                  | 4                  | 4                  | 4.                 | 4                  | 4                  | ۳.                 | ω,     | ω.     | ω,     | ω.     | 63.5   | ω.     | ω.     | ω.                 | G.                 | ۳.                 | 'n                 | ۳.                 | e      | ۳.                 | 63                 |                    |
| 12               | 14     | 15     | 16      | 17       | 18                 | 19     | 20                 | 21                 | 22                 | 23                 | 24                 | 25                 | 26                 | 27                 | 28                 | 29                 | 30     | 31     | 32     | 33     | 34     | 35     | 36     | 37                 | 38                 | 39                 | 40                 | 41                 | 42     | 43                 | 44                 | 45                 |

## ALIGNMENTS

RESULT 75822

AA. Y58222 standard; Protein; 111

Y58222;

(first entry) 14-MAR-2000

Canine mature interleukin-13 (IL-13) clone 80.

Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.

Canis familiaris.

W09961618-A2.

02-DEC-1999.

99WO-US11942. 28-MAY-1999; 98US-0087306. 29-MAY-1998;

(HESK-) HESKA CORP.

Wonderling RS; Yang S, Dreitz MJ, Sim G,

WPI; 2000-072623/06. N-PSDB; Z55559, Z55560.

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

Claim 31; Page 234; 264pp; English,

```
Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline FIL-3 ligand, canine or feline CD40, canine or feline CD40, canine or feline CD40, canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nuclectides which encode these munuoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including aliengies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunoregulation; tumour; cancer; autoimmune disease; vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 tqrmlkalcsqkpaaggissersrdtkieviglvknlltyvrgvyrhgnfr 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 561; DB 21;
Pred, No. 1.1e-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-072623/06.
N-PSDB; 255555, 255556, 255557, 255558.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canine interleukin-13 (IL-13) clone 80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 31; Page 231; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y58221 standard; Protein; 131 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match
Best Local Similarity 100.
Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                       and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                           111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y58221;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (TRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunorequilatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoinmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antique. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense aligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline Flt-3 ligand, canine or feline CD40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 spytpsptlkelieelvnitqnqaslcngsmvwsvnltagmycaaleslinvsdcsaigr 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 561; DB 21;
Pred. No. 1.4e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canine mature interleukin-13 (IL-13) clone 78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3i; Page 240; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Y58224 standard; Protein; 110 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.0%; S
Best Local Similarity 100.0%; P
Matches 111; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                 and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; Z55565, Z55566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                      131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y58224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y58224
        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophlactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primars and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for andiance of a contraction, and to acree of a contraction, and to acree of antibodies and to screen for an antisense oligonucleotides.
                                                                                                                                                                                                                                                                                                                                                                                                            <u>:</u>;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline FIt-3 ligand, canine or feline CD40, canine or feline CD54 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                            Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                              .;
;
                                                                                                                                                                                                                                                                                                                                                                          21; Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97.2%; Score 545.5; DB 21; Length
99.1%; Pred. No. 8.6e-59;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; 255561, 255562, 255563, 255564.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 3i; Page 237; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y58223 standard; Protein; 130 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                      Query Match 97.2
Best Local Similarity 99.1
Matches 110; Conservative
                                                                                                                                                                                                                                                                                 and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                   110 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-DEC-1999
                                                                                                                                                                                                                                                                                                                     Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Y58223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y58223
     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G
```

```
immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
colony-stimulating factor (GMCSF), and nucleotides which encode these
                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                     21 spvtpsptlkelieelvnitgngaslcngsmvwsvnltagmycaaleslinvsdcsaigr 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                       Score 545.5; DB 21; Length 130;
Pred. No. 1.1e-58;
0; Mismatches 0; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81 tqrmlkalcsqkpaag-issersrdtkieviqlvknlltyvrgvyrhgnfr 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interleukin; chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein with cytokine activity encoded by Nal'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R27347 standard; Protein; 112 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                       97.28;
99.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91FR-0003904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 99.1
Matches 110; Conservative
                                                                                                                                                                                                                                                and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                 130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; Q28944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP506574-A.
                                                                                                                                                                                                                                                                                     Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R27347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R27347
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

;

us-09-451-527-97.rag

ij

112 AA;

Sequence

S

```
Gaps
                                                             2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonist activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-92, R92795-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mutein(s) of human and murine cytokine(s), esp. interleukin(s) and murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
                                                                           2 pvppstalrelieelvnitqnqkaplcngsmvwsinltagmycaaleslinvsgcsaiek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Arg at position 64 may be replaced by an acidic amino acid, including Asp"
                                1;
                                                                                                                                                                                                                                                                                                                                                            mutein; interleukin-13; IL-13; agonist; antagonist; therapy; cancer; inflammation; degenerative disease.
Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    incte. "Glu at position 11 may be replaced by amidated amino acid, including Lys"
                                                                                                                          61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                          ; Score 382.5; DB 13; Length; Pred. No. 6.4e-39; 11; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 12; Page 46; 52pp; English
                                                                                                                                                                                                                                                                                                                               Human interleukin-13 mutein 1.
                                                                                                                                                                                                                                   R92793 standard; Protein; 112
68.2%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94US-0284393
                                                                                                                                                                                                                                                                                                (first entry)
Query Match
Best Local Similarity 70.09
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-129335/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9604306-A2
                                                                                                                                                                                                                                                                                                24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zurawski G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                              diagnosis;
                                                                                                                                                                                                                                                                                                                                                               Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                  R92793;
                                                                                                                                                                                                      RESULT
R92793
                                                                                        g
                                                                                                                                                                                                                                     ò
                                                                                                                                                    q
```

Seguence- 112 AA;

```
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                         Gaps
                                                                2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                 2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pvppstalrelieelvnitgngkaplcngsmvwsinltagmycaaleslinvsgcsaiek 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into MI3 and sequenced. This sequence encodes human IL-13.
                                      1;
          Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 15; Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Purified interleukin-13 proteins and antibodies - obtd, using mouse gene encoding related protein \ensuremath{\mathsf{P600}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                         Interleukin-13; lymphokine; immunological disorder; therapy;
                                                                                                                       61 TORMLKALCSOKPAAGOISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                       |||||| | ||:||| || ||||||| ||:|| :: ::| | |
tqrmlsgfcphkvsagqfsslhvrdtkievaqfvkdlllhlkklfregrf 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cooks BG;
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aversa G, Banchereau J, Briere F, Coffman RL, Cook
Culpepper, Dang W, De Vries J, De Waal Malefyt R;
Doherty TM, Heath A, McKenzie A, Punnonen J, Zura
          DB 17;
                                      21;
     Score 382.5; DB 1'
Pred. No. 6.4e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.2%; Score 382.5; DB 170.0%; Pred. No. 7.9e-39;
68 2%; Scotton 70.0%; Pred. No. cotton 11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11; Mismatches
                                                                                                                                                                                                                                                                                                            human interleukin-13 (IL-13).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claime 1; Page 126-127; 135pp; English.
                                                                                                                                                                                                                           ¥.
                                                                                                                                                                                                                         R48624 standard; Protein; 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93WO-US07645
                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1994-083197/10.
                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best_Local Similarity
Matches 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; 056692.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-AUG-1992;
29-JAN-1993;
01-FEB-1993;
             Quer,
Best Local Simi
                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-AUG-1993;
                                                                                                                                                                                                                                                                                                             Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                             WO9404680-A.
                                                                                                                                                                                                                                                                                14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                        03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                        diagnostic.
          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                     R48624;
                                                                                                                                                                                             RESULT
R48624
                                                                                         q
                                                                                                                        δ
                                                                                                                                                 qq
                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
```

site"

peptide cleavage

Ŋ

R27346

g

```
PUTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A novel cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin was coded for by the sequence in clone PSEI-NG30. A second clone was also identified (PSEI-NG30bis) which differed only in the identity of codon 41. The corresponding proteins differ in the amino acid at position which is either Asp (in NC30) or Gly (in NC30bis). The cytokine acts on monocytes and B lymphocytes and is useful in treatment of see Q28941-Q28947.
                                                                                                                                                                                                                                                                                                                                                                                      Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytokine: mutein; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease
                                                                              /note= "putative signal peptide cleavage site"
                                                                                                                                           /note= "putative signal peptide cleavage site"
                                               /note= "putative signal peptide cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Score 375.5; DB 13; Length; Pred. No. 6.5e-38; 11; Mismatches 22; Indels
                                                                                                            "putative signal
                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 52-53; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A'A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human interleukin-13 mutein 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R92794 standard; Protein; 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66.9%;
69.1%;
                                                                                                                                                        35..146
/label= NC30
                                                                                                                                                                                                                                                                          92EP-0400858
                                                                                                                                                                                                                                                                                                       91FR-0003904
                                                                                                                                                                                                                                                                                                                        92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                             ...33
                                                                                                                              .35
                                                                . 25
                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1992-325841/40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                       (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; 028947
                                  cleavage_site
                                                                                             cleavage_site
                                                                                                                              cleavage_site
                                                                cleavage_site
                                                                                                                                                                                                                                                                        27-MAR-1992;
                                                                                                                                                                                                                                                                                                       29-MAR-1991;
                                                                                                                                                                                                                                                                                                                        08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-MAY-1996
                                                                                                                                                                                                                                          30-SEP-1992
                                                                                                                                                                                                           EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R92794;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                XXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytoheemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                               Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 13; Length 112;
TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                        chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interleukin; chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.5e-38;
                                                                                                                                                                                        Protein with cytokine activity encoded by Nal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66.9%; Score 375.5;
69.1%; Pred. No. 4.5e
ive 11; Mismatches
                                                                                               Æ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R27348 standard; Protein; 146 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78pp; French.
                                                                                        R27346 standard; Protein; 112
                                                                                                                                                                                                                                                                                                                    92EP-0400858
                                                                                                                                                                                                                                                                                                                                                  91FR-0003904
92FR-0000137
                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1992-325841/40
                                                                                                                                                                                                                                                                                                                                                                                                  (SNFI ) ELF SANOFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; Q28943.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cytokine NC30
                                                                                                                                                                                                                                                                                                                    27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                    29-MAR-1991;
                                                                                                                                                          24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                    08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-FEB-1993
                                                                                                                                                                                                                                                                                     30-SEP-1992
                                                                                                                                                                                                                                                      EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                           R27346:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R27348;
             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
```

ij

Gaps

1;

g ò g

XX DX DX XXX

Length 146;

ö

Cooks BG;

```
An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepdicom a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                                                     Purified interleukin-13 proteins and antibodies - obtd. using mouse gene encoding related protein P600
                                                                                                                                                                                                                                                Banchereau J, Briere F, Coffman RL, C.
, Dang W, De Vries J, De Waal Malefyt
M, Heath A, Mckenzie A, Punnonen J, Z
                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 128-129; 135pp; English.
                                                                                                                             92US-0933416.
93US-0010977.
93US-0012543.
                                                                                             93WO-US07645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                            (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                    Culpepper, Dang W,
Doherty TM, Heath
                                                                                                                                                                                                                                                                                                                             WPI; 1994-083197/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                               N-PSDB; Q56693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9604306-A2
                                                                                           18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                 WO9404680-A.
                                                                                                                                 21-AUG-1992;
                                                                                                                                                   29-JAN-1993;
01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murine P600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-FEB-1996
                                                     03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61;
                                                                                                                                                                                                                                                    Aversa G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R92795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonist activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-22, R92795-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interleukin-13; lymphokine; P600; immunological disorder; therapy;
                                                                                               an
                                                                                                                                                       an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 esp. interleukin(s)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                             64
/note= "Arg at position 64 may be replaced by
    acidic amino acid, including Asp"
                                                                                         /note= "Glu at position 11 may be replaced by
  amidated amino acid, including Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65.4%; Score 367; DB 17; Length 111; 69.1%; Pred. No. 4.9e-37; Live 11; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |||||| | | :|| || |||||||| ||||||| :::::| | | tqrmlsgfcphkvsag-fsslhvrdtkievaqfvkdlllhlkklfregrf 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mutein(s) of human and murine cytokine(s), esp. intermurine P600 contg. amino acid substitutions. - useful diagnosis and treatment of cancer, inflammation, etc.
                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 12; Page 46; 52pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R48625 standard; Protein; 131 AA
                                                                                                                                                                                                                                                                                        95WO-US08950
                                                                                                                                                                                                                                                                                                                           94US-0284393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match
Best Local Similarity 69.19
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence of mouse P600
                                                                                                                                                                                                                                                                                                                                                                 (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1996-129335/13.
                                                                       Misc-difference 11
                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                           01-AUG-1994;
                                                                                                                                                                                                          WO9604306-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                15-FEB-1996,
                                                                                                                                                                                                                                                                                                                                                                                                       Zurawski G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnostic.
                   Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R48625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
```

```
;;
                      Gaps
                                          67
                                                     Cytokine; mutein; P600; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease.
                                         TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA
                                                                                                                                                                                                                                                                                                                    an
                     3;
DB 15; Length 131;
                                                                                                                                                                                                                                                                                                                  /note= "Arg at position 67 may be replaced by
    acid amino acid, including Asp"
                      23; Indels
                                                                                  LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                               Score 295.5; DB 1
Pred. No. 3.1e-28;
                      Mismatches
                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                           ¥
                    16;
                                                                                                                                                 R92795
ID R92795 standard; Protein; 111
52.7%;
59.2%;
```

R48625

ò g ò . 2 ^

```
QQ
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                5;
                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                 8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                            Muteins of mouse P600 (R92795) contain amino acid substitutions at amino acid position 67 in helix C. They are obtd. by site-directed mutagenesis of natural P600 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins present at a 100-fold excess. They and other cytokine muteins cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                               esp. interleukin(s) and s. - useful for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Invasin protein; SipC; mucosal immune response; vaccine; adjuvant; shigellosis; salmonellosis; enteroinvasive E. coli; immune system; immuno-compromised; intracellular delivery; antigen.
                                                                                                                                                                                                                                                                                                                3;
                                                                                                                                                                                                                                                                                             DB 17; Length 111;
                                                                                                                                                                                                                                                                                                               23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Amino acid sequence of the Shigella invasin protein SipC.
                                                                                            Mutein(s) of human and murine cytokine(s), esp. intermurine P600 contg. amino acid substitutions. - useful diagnosis and treatment of cancer, inflammation, etc.
                                                                                                                                                                                                                                                                                                                                                                        68 LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                   52.1%; Score 292.5; DB 1 58.3%; Pred. No. 5.8e-28;
                                                                                                                                                                                                                                                                                                              17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oaks EV;
                                                                                                                                    Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Y84919 standard; protein; 382 AA.
95WO-US08950
                  94US-0284393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0105085
99US-0136754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US24931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                  Best Local Similarity 58.3
Matches 60; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Picking WD,
                                     (SCHE ) SCHERING CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYSL-) UNIV ST LOUIS
                                                                           WPI; 1996-129335/13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-339646/29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shigella flexneri.
                                                                                                                                                                                                                                                                111 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200023462-A1
                  01-AUG-1994;
31-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Picking WD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-OCT-1998;
01-JUN-1999;
                                                        Zurawski G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-APR-2000
                                                                                                                                                                                                                                                                 Sednence
                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Y84919
                                                                                                                                                                                                                                                                                                                                                                                         72
                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                      QQ
```

```
The present sequence represents the invasin protein SipC. The specification describes a method for the production of recombinant invasin proteins which are superior to presently approved adjuvants due to their low toxicity, their ability to stimulate both peripherals and mucosal immune response, and ease of production. The invasin protein may be used as a vaccine and as an adjuvant for the prevention of diseases such as shigellosis, salmonellosis and diseases caused by enteroinvasive E. coli, and in stimulating the immune system of immuno-compromised individuals. The invasin protein is also useful for intracellular delivery of therapeutic and diagnostic agents, and to stimulate immune response by cells in vitro. The invasin protein an immune response to the antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention describes targeting ligands which are mutagenized IL13 (interleukin 13) molecules having one or more mutations in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New mutagenized interleukin 13 molecules for delivery of cytotoxins to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      purified recombinant invasin proteins IpaC and SipC useful as an avant and vaccine against shigellosis, salmonellosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas exotoxin; PE; mutagenised; IL-13; chimeric; interleukin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytotoxin; fusion protein; cancer; glioma; neoplasia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.7%; Score 71.5; DI 22.0%; Pred. No. 2.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human interleukin 13 N-terminal peptide #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expressing IL13 receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 3; 57pp; English.
                                                                                                             Claim 4; Page 3-5; 78pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA.
                                                           enteroinvasive Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y49702 standard; peptide; 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0054711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US07188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 22.0 Matches 26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-633731/54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382 AA;
                                adjuvant and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W09951643-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PENN-) PENN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-0CT-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Debinski W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cells over
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Y49702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X49702
```

invention describes a novel isolated polypeptide (I) and its

Disclosure; Page 434-435; 453pp; English

and Parkinsons -

```
domain that interacts with the hII14 receptor subunit designated the

140 kDa hIL4Rbeta subunit. A cytotoxic molecule covalently attached to

a mutagenized hIL13 receptor. Where the effector molecule is a

cytotoxin, neoplastic cells (e.g. a glioma) can be killed or inhibited.

Cytotoxin, neoplastic cells (e.g. a glioma) can be killed or inhibited.

CC The methods are used to target effector molecules to kidney cancers, to

skin cancers (Raposi's sarcoma) and to brain cancers (gliomas and

CC medulloblastomas). When the mutagenized cell is attached to a detectable

CC medulloblastomas). When the mutagenized cell is attached to a detectable

CC medulloblastomas. When the mutagenized to detect the presence or absence

CC of tumour cells, or label can abe used to detect the presence or absence

CC of tumour cells, or label localizes at the site of overexpression and

IL13 receptor. The label localizes at the site of overexpression and

Indicates the presence, absence, quantity or location of such cells. If

CC enhance and direct an immune response toward target cancer cells. The

mutagenized IL13s may be conjugated to a drug such as vinblastine,

CC enhance and direct an immune response toward target cancer cells. The

mutagenized IL13s may be conjugated to a drug such as vinblastine,

CC enhance and direct an immune response toward target cells over

CC expressing IL13 receptors. The targeting ligands have increased

CC specificity for cancer cells as compared to normal cells and are

CC specificity for cancer cells as compared to normal cells and are

CC therefore very effective for specifically delivering effector molecules

CC exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
```

Gaps ö Score 67; DB 20; Length 21; Pred. No. 0.18; 1; Mismatches 3; Indels 11.98; 77.88; 2 PVTPSPTLKELIEELVNI 19 4 pvppstalrelicelvni 21 Best Local Similarity 77.8 Matches 14; Conservative Query Match ò qq

B44998 standard; Protein; 279 AA. B44998; 

12-FEB-2001 (first entry)

Secreted protein; human; immunosuppressive; antiarthritic; antirheumatic; antiproliferative; cytostatic; cardiant; vasotropic; cerebroprotective; nootropic; neuroprotective; antibacterial; virucide; fungicide; ophthalmological; gene therapy; treatment; autoimmune disease; infection; cardiovascular disorder; nervous system disorder; ocular disorder; wound healing; epithelial cell proliferation; skin aging; mental state; Human secreted protein encoded by gene 28 homologue.

Homo sapiens

transplantation; metabolism modulation

WO200055200-A1

21-SEP-2000

09-MAR-2000; 2000WO-US06042.

99US-0124143. 99US-0168663. L2-MAR-1999; 03-DEC-1999;

(HUMA-) HUMAN GENOME SCI INC

Komatsoulis G;

Ruben SM,

Rosen CA,

WPI; 2000-656008/63

antibodios directed against them, useful for diagnosing and treating disorders related to the proteins such as cancer, Alzheimer's disease Isolated human secretory proteins, nucleic acids encoding them and

```
This invention describes a nove isolated polypeptide (i) and its encoding nucleic acid molecule (II) which have immunosuppressive, antiarthritic, antirheumatic, antiproliferative, cytostatic, cardiant, cardiantion or susceptibility to a pathological condition in e.g. humans, mice, rabbits, goats, horses, cats, dogs, chickens or sheep. (I) and (II) are also used in diagnoshing a methological condition or susceptibility to a pathological condition. The pathological condition or susceptibility to a pathological condition. The cardiosted of (II) can also be used in alleviating symptoms associated with the disorders and in diagnostic immunosasays e.g. radioimmunoassays or enzyme linked immunosorbent assays (ELISA). Disorders which are cardiovascular disorders e.g. cardiac arrest, cerebrovascular arthritis, hyperproliferative disorders e.g. cardiac arrest, cerebrovascular disorders e.g. cardiac arrest, cerebrovascular disorders e.g. cardiac arrest, cerebrovascular disorders e.g. corneal infection. The polypeptides can cludy and ocular disorders e.g. corneal infection. The polypeptides can cludy and ocular disorders e.g. corneal infection. The polypeptides can cludy and ocular disorders e.g. corneal infection. The polypeptides can cluso be used to aid wound healing and epithelial cell proliferation, to prevent skin aging due to sumburn, to maintain organs before transplantation, for supporting cell culture of primary tissues, to creperate tissues and in chemotaxis. The polypeptides are used to modulate mammalian metabolism, to change mammal's mentabolism, to change mammal's mentabolism, to change mammal's mentabolism to change mammal's mentabolism, to change members, such as to conditive qualities, as a foreage expandence or decrease storage capabilities, increase or decreases storage capabilities, factorate capabilities, reproductive capabilities ore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 lkvgmeqlv···qnatfrcilatllavgnflngsq····ssgfxlsylekvsxvkd·· 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 LKELIEELVNITQNQASLC-----NGSMVWSVNLTAGMYCAALESLINVSDCS 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          carbohydrates, vitamins, minerals, cofactors or other nutritional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 21; Length 279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | | : | | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AIQRTQRMLKALCS----QKPAAGQISSE---RSRDTKIEVIQLVKNL 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 65.5; DB
Pred. No. 9.1;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 11.79
Best Local Similarity 28.79
Matches 31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     279 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               components
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

Search completed: May 13, 2001, 17:47:35 Job time: 12335 sec

```
PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                               May 13, 2001, 17:48:30 ; Search time 42.06 Seconds (without alignments) 50.699 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
Appli
Appl
Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                      SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, 1
Sequence 2, 1
Sequence 2, 1
Sequence 2, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, 1
Sequence 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 14, Sequence 5, Sequence 15, Sequence 15, Sequence 4, Sequence 4, Sequence 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4
Sequence 4
Sequence 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1
Sequence 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                              185757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgnl_7/ptodata/1/iaa/5A_COMB.pep:*
/cgnl_7/ptodata/1/iaa/5B_COMB.pep:*
/cgnl_7/ptodata/1/iaa/6A_COMB.pep:*
/cgnl_7/ptodata/1/iaa/6B_COMB.pep:*
/cgnl_7/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgnl_7/ptodata/1/iaa/PCTUS_COMB.pep:*
4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-371-121-1
US-08-371-121-1
US-08-284-393B-14
US-08-284-393B-5
PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-284-393B-15
US-08-012-543-4
US-08-371-121-25
PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-284-3938-16
US-08-176-414B-2
US-08-687-559-25
US-08-993-228-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-188-579-85
US-08-222-619-2
PCT-US95-04075-2
US-08-731-716-2
US-08-75-009-35
                                                                                                                                                                                                                                                                                                                                                                            hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US93-07645A-2
PCT-US93-07645A-2
PCT-US93-07645-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US93-07645-4
US-08-284-393B-6
PCT-US95-08950-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                        185757 seqs, 19210857 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
  GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Listing first 45 summaries
                                                                              - protein search, using sw model
                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                        US-09-451-527-97
                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \alpha\alpha\alpha\alpha\alpha\alpha\alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .. ..
                                                                                                                                                                                                                                                                                                                                                                              jo
                                                                                                                                                                                                                                                                                                                                                                                                                    sed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3882.3
3882.5
3882.5
3882.5
3882.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
3875.5
38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                              Total number
                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                            OM protein
                                                                                                                                                                                                                                        Sednence:
                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
                                                                                                                                                                                                  Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š.
```

| 4, Appli<br>15, Appli<br>15, Appli<br>15, Appli<br>9, Appli<br>9, Appli<br>6, Appli<br>10, Appli<br>10, Appli<br>11, Appli<br>11, Appli<br>11, Appli   |  | Gaps 1  |
|--|--|---|
| acinence edineuce edi |  | 112;<br>1;  |
| X X X X X X X X X X X X X X X X X X X  | S  | Length<br>Indels  |
| 28 60.5 10.8 2629 2 US-09-060-836-4 30 60.5 10.8 2629 4 US-09-184-445-4 31 60 10.7 2004 1 US-08-375-709-15 32 60 10.7 2004 4 US-09-191-529-15 33 59.5 10.6 735 3 US-09-191-647-9 34 59 10.5 119 2 US-08-318-1578-57 35 58.5 10.4 649 4 US-09-109-301A-4 37 58.5 10.4 649 4 US-09-105-8 38 58 10.3 529 1 US-07-990-301A-4 37 58.5 10.3 529 1 US-08-318-105-8 38 58 10.3 529 1 US-08-630-820-7 41 57 10.2 477 2 US-08-03-603-8 42 57.5 10.2 477 2 US-08-03-603-8 44 57 10.2 414 1 US-08-002-202-17   | SULT 1  SGUT 2  SGUT 3  SGT 3 | Query Match 68.2%; Score 382.5; DB 1; Best Local Similarity 70.0%; Pred. No. 3.2e-41; Matches 77; Conservative 11; Mismatches 21; |
| ·.   | RESSULT Sequence of the sequen | Õ n ž   |
| •  |  |   |

1;

Briere, Francine

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 PVPPSTALRELIEELVNITYONQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 5; Length 112;
61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                   61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                           APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68.2%; Score 382.5; DB 5; 70.0%; Pred. No. 3.2e-41; tive 11; Mismatches 21;
                                                                                                                                                                                                                                                         ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: PCT/US95/08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/284,393
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08012543; Patent No. 5596072; GENERAL INFORMATION:
APPLICANT: Culpepper, Janice APPLICANT: MCKenzie, Andrew APPLICANT: Dang, Warren APPLICANT: de Waal Malefyt, Rene
                                                                                                                          Sequence 4, Application PC/TUS9508950 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DX0389
                                                                                                                                                                                                                                                                                                            STATE: CL. USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPALIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dang, Warren
de Waal Malefyt, Rene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Heath, Andrew
Aversa, Gregorio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 112 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ching, Edwin P. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                             Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 77; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                          RESULT 2
PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
US-08-012-543-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                  a
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
```

```
2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21; Indels
                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/012,543
FILING DATE: 01-FEB-1993
CLASSIFICATION 1435
PRIOR APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGEBWT INPORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.2%; Score 382.5; DB 1; 70.0%; Pred. No. 4.1e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11; Mismatches
             APPLICANT: de Vries, Jan
APPLICANT: Zurawski, Gerard
ATLLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
WUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                         3: DNAX Research Institute 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DX0302K1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                          ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBB PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application PC/TUS9307645A GENERAL INFORMATION:
Banchereau, Jacques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECÓMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 132 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 70.09
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , MOLECULE TYPE: protein US-08-012-543-2
                                                                                                                                                                Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
PCT-US93-07645A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
```

```
TITLE OF INVENTION: Protein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms. NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAXMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label= Xaa
/note= "amino acid is Asp or Gly"
                                                                                                                                                                                                                                                      Marilyn
Protein having a cytokine type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66.9%; Score 375.5; DB 1
69.1%; Pred. No. 2.5e-40;
Tive 11; Mismatches 22
                                                                                                                                                                                                                        LABIT-LE BOUTEILLER, Christine MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                          STREET: FOLEY & LARDNER STREET: 3000 K Street, N.W., Suite 500 CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280
FTITING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
                                                                                                                            FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                        Sequence 1, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard D.
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 112 amino acids
TYPE: amino acid
                                                                                                                                                                                                                KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: Modified-site
                                                                                                         CAPUT, Daniel
                                                                                                                                                                                          MINTY, Adrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (202) 672-539
TELEX: 904136
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                             RY: USA
20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION
                   US-08-371-121-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-371-121-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                          2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                  22 PVPPSTALRELIEELVNITONOKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                               Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                           68.2%; Score 382.5; DB 5; 70.0%; Pred. No. 4.1e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68.2%; Score 382.5; DB 5 70.0%; Pred. No. 4.1e-41; ive 11; Mismatches 21
                                                                                                                                                                                                                                                                                                                                 11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: MICTOSOFT WORD 5.1a
CURRENT APPLICATION DATA:
PPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
FILING DATE: 05 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
                                          FILING DATE: 11-AUG-1992
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 132 amino acids
TOPOLACY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 2:
US 08/010977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application PC/TUS9307645 GENERAL INFORMATION:
                 29-JAN-1993
                                                                                                                                                                                                                                                                            Ouery Match
Best Local Similarity 70.08
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 132 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 70.0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                 FILING DATE: 29-JAN-1 PRIOR APPLICATION DATA:
                                                                                                                                                                                  TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US93-07645A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; . MOLECULE TYPE: protein PCT-US93-07645-2
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
PCT-US93-07645-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
```

g ò ;

61

g δ

```
36 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTADMYCAALESLINVSGCSAIEK 95
                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-284-393B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
qq
                                  ò
                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Protein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 146;
                                      61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentUR Release #1.0, Version #1.25
GURREW APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66.9%; Score 375.5; DB 1;
69.1%; Pred. No. 3.7e-40;
ive 11; Mismatches 22;
                                                                                                                                                                                                                                                                                                     LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                                                                                               : 3000 K Street, N.W., Suite 500 Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER. ...
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, Bernhard 8,665
REGISTRATION NUMBER: 28,665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/FR92/00280 FILING DATE: 27-MAR-1992 PRIOR APPLICATION DATE: R 91 00137 FILING DATE: 08-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
                                                                                                                                                                                                                             GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
                                                                                                                                         ; Sequence 16, Application US/08371121
; Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                              FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 1
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                 FERRARA, Pascual
                                                                                                                                                                                                                                                                  MINTY, Adrian
KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146 amino acids
                                                                                                                                                                                              CAPUT, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 904136
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match
Best Local Similarity 69.1
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                      MAGAZIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE:
US-08-371-121-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                        RESULT 7
US-08-371-121-16
                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                    à
                                               Q
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 PVPPSTALRKLIEELVNITQNQKAPICNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 TQDMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 111
TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                              US-08-284-393B-14
Sequence 14, Application US/08284393B
Patent No. 5696234
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION:
TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE OF THE TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5, Application US/08284393B.
Patent No. 5696234
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66.2%; Score 371.5; DB 1; 68.2%; Pred. No. 8.1e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: DNAX Research Institute
STREET: 901 Callfornia Avenue
CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 112 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: peptide US-08-284-393B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
```

1;

5;

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                          2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
?
                                                                                                                                                                                                                                                                                                                                                                            ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 TQRMLSGFCPHKVSAG-FSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                               DB 5; Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63.5%; Score 356; DB 1; Length 11 67.3%; Pred. No. 7.5e-38; Live 12; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                       21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
CORRESPONDENCE: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
                                                                                                                                                                                                                                                                                                                            Score 367; DB 5;
Pred. No. 3e-39;
                                                                                                                                                                                                                                                                                                                                                                       11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 15, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS/MS-DOS
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 01-AUG-1994
CLASSIFICATION: 435
ATTORNEY/ACENT INFORMATION:
NAME: Ching, Edwin P.
RECISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 94304-11...
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
nouningR: IBM PC compatible
nouningR: IBM PC compatible
                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                               65.4%;
69.1%;
                                                                                   TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: 5:
                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 111 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 111 amino acids
                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 69.1%
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 63.5
Best Local Similarity 67.3
Matches 74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                        TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: peptide
                                                                                                                                                                                                                   TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-284-393B-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-284-393B-15
                                                                                                                                                                                                                                                                PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 PVPPSTALRELIEELVNITQNQKAPICNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65.4%; Score 367; DB 1; Lengumar.
69.1%; Pred. No. 3e-39;
... wismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5, Application PC/TUS9508950
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYETEM: PC-DOS/WS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
SURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/08950
                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/284,393B
FILLING DATE: 01-AUG-1994
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/284,393
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                            DX0389
  901 California Avenue
                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX03
TELEPOMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEPHONE: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 94304-110.
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
computible
non-nosyMs.
                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 111 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 69.1'
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ching, Edwin P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: peptide US-08-284-393B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Palo Alto
STATE: California
                        Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                   94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                        CITY: E
```

```
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
                                                                                                                                                                                 APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                                                                                                                         3000 K Street, N.W., Suite 500
                                                                                                                              FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                       Sequence 25, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                         FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: SAXE, Bernhard D. REGISTRATION NUMBER: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 59.29
Matches 61; Conservative
                                                                                                              Daniel
                                                                                                                                                                                                                                                                                                                                                                                          Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 30-NOV-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: P
                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 20007-5109
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-08-371-121-25
                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acid
TOPOLOGY: linear
                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX: 904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                        US-08-371-121-25
                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
PVTPSPTLKELTEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
                   2 PVPPSTALRKLIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSALQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 131;
                                                                    61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                           23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68 LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/012,543 FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.7%; Score 295.5; DB 1; 59.2%; Pred. No. 4.7e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                      Banchereau, Jacques
de Vries, Jan
Zurawski, Gerard
Zurawski, Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNAX Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: DX0302K1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                Dang, Warren
de Waal Malefyt, Rene
Heath, Andrew
                                                                                                                                                                                                  Sequence 4, Application US/08012543 Patent No. 5596072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34,090
                                                                                                                                                                                                                                                          Culpepper, Janice
                                                                                                                                                                                                                                                                                                                                                    Aversa, Gregorio
Briere, Francine
                                                                                                                                                                                                                                                                           McKenzie, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best_Local Similarity 59.23
Matches 61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Ching, Edwin P. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS LENGTH: 131 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 94304-1104
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 01
CLASSIFICATION:
                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
TITLE OF IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX:
                                                                                                                                                              RESULT 12
US-08-012-543-4
                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-012-543-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                                                                                 APPLICANT
                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92
                              g
                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                               SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 295.5; DB 1
Pred. No. 4.7e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52.7%; Score 295.5; L
59.2%; Pred. No. 4.7e:
tive 16; Mismatches
                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/FR92/00280 FILING DATE: 27-MAR-1992
                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DAPR:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
```

```
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                               Оp
                                                                                                                                                                                                                                                                                                                                      QΫ
                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68 LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 LCNRK-APTIVSS--LPDIKIEVAHFITKLLSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 295.5; DB 5 Pred. No. 4.7e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52.7%; Sco...
59.2%; Pred. No. ...
'va 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Human Interleukin-13
NUMBER OP SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                           Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
FILING DATE: 19930818
FILING DATE: 19930818
FILING DATE: 01-FEB-1993
FILING DATE: 01-FEB-1993
PRIOR APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
FILING DATE: 29-JAN-1993
FILING DATE: 21-JAN-1993
FILING DATE: 21-JAN-1993
FILING DATE: 21-AUG-1992
                                                                                                                                                                                                                                                                                                                   PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                  PRICE APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-7AN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Macintosh 6.0.5
                                                                                       Sequence 4, Application PC/TUS9307645A; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 4, Application PC/TUS9307645; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: Apple Macintosh OPERATING SYSTEM: Macintosh 6. SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                        TITLE OF INVENTION: Human INUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 59.29
Matches 61; Conservative
                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: protein PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                         RESULT 14
PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
PCT-US93-07645-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
```

1

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
```

protein search, using sw model OM protein -

Run on:

May 13, 2001, 21:48:37 ; Search time 64.5 Seconds

(without alignments)
118.267 Million cell updates/sec

US-09-451-527-97 561 Perfect score: Title:

1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 111 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

198801 segs, 68722935 residues Searched:

198801 Total number of hits satisfying chosen parameters:

length: 0 length: 2000000000 Minimum DB seq Maximum DB seq

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

1: pir1:\* 2: pir2:\* 3: pir3:\* 4: pir4:\* PIR\_67:\* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

|           | Description   | interleukin-13 pre | T-cell activation | interleukin-13 - r | transcription fact | 42K membrane antig | sepiapterin reduct | sepiapterin reduct | ipaC protein - Shi | Ω        | scription | movement protein - | acrosin (EC 3.4.21 | sepiapterin reduct | penicillin binding | hypothetical prote | large tegument pro | probable membrane | ATP-dependent RNA | DNA mismatch repai | Ig gamma chain C r | probable transcrip | probable cinnamyl- | hypothetical prote | Clathrin heavy cha | 30K protein - toba | hypothetical prote | hypothetical prote | myosin-RhoGAP prot | conserved hypothet |
|-----------|---------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------|-----------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SUMMARIES | ID            | A47481             | E30552            | 152290             | S17196             | A60112             | JQ1176             | A36024             | S15578             | S77393   | S15667    | JC1339             | S47538             | S52110             | F82660             | T00714             | T03159             | 853939            | S62423            | H72427             | GHRB               | G70622             | T16995             | S49937             | S42369             | S26359             | 8                  | T47655             | 9                  | н82920             |
|           | DB            | -                  | 7                 | ~                  | ~                  | ٦                  | 7                  | ď                  | ~                  | ~        | ~         | ~                  | ~                  | 7                  | ~                  | 7                  | ~                  | ~                 | ~                 | ~                  | -                  | ~                  | 7                  | ~                  | ~                  | 7                  | 7                  | ~                  | 7                  | 7                  |
|           | Length        | 146                | 131               | 131                | 701                | 382                | 261                | 262                | 382                | 430      | 677       | 267                | 431                | 261                | 494                | 559                | 2606               | 1004              | 481               | 516                | 323                | 1234               | 325                | 326                | 1681               | 268                | 451                | 2149               | 2626               | 336                |
| æ         | Query         | 8                  | 52.7              | 52.4               | 13.0               | 12.7               | ٠.                 |                    |                    | 12.5     | 12.5      | 12.4               | 12.4               | 12.2               | 12.2               | 12.2               | 12.2               |                   | 11.9              |                    |                    |                    |                    |                    |                    | ä                  | 11.6               | ÷                  |                    | 11.5               |
|           | Score         | 382.5              | 295.5             | 294                | 73                 | 71.5               | 7.1                | 70.5               | 70                 | 70       | 70        | 69.5               | 69.5               |                    | 68.5               | 68.5               |                    | 99                | 29                | 9                  | 66.5               | 9                  | ω.                 | 65.5               | δ.                 |                    | 65                 |                    | 65                 | 64.5               |
|           | Result<br>No. | н                  | 7                 | ю                  | 4                  | S                  | 9                  | 7                  | 80                 | <b>б</b> | 10        | 11                 | 12                 | 13                 | 14                 | 12                 | 16                 | 17                | 18                | 19                 | 20                 | 21                 | 22                 | 23                 | 24                 | 25                 | 56                 | 27                 | 28                 | 29                 |

| probable secreted | hypothetical prote | hypothetical prote | phosphotyrosine ph | hypothetical prote | hypothetical prote | hypothetical prote | hypothetical prote | rapid lysis protei | alpha-1 proteinase | dual specificity p | histone Hlt - pig | hypothetical prote | platelet-derived e | afamin precursor - | autoantigen NOR-90 |
|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| T34585            | T50355             | C64028             | T41891             | H71914             | S46769             | T41008             | T51792             | Z2BPA4             | A29952             | A40781             | HSPG1T            | D83306             | S03904             | A54906             | S18193             |
| 7                 | 7                  | 7                  | ~                  | ~                  | N                  | ņ                  | N                  |                    | ~                  | -                  | -                 | 7                  | Н                  | П                  | 7                  |
| 411               | 425                | 139                | 168                | 683                | 1164               | 1502               | 655                | 725                | 1477               | 168                | 211               | 361                | 482                | 599                | 727                |
| 11.5              | 11.5               | 11.4               | 11.4               | 11.4               | 11.4               | 11.4               | 11.3               | 11.3               | 11.3               | 11.2               | 11.2              | 11.2               | 11.2               | 11.2               | 11.2               |
| 64.5              | 64.5               | 64                 | 64                 | 64                 | 64                 | 64                 | 63.5               | 63.5               | 63.5               | 63                 | 63                | 63                 | 63                 | 63                 | 63                 |
| 30                | 31                 | 32                 | 33                 | 34                 | 35                 | 36                 | 37                 | 38                 | 39                 | 40                 | 41                | 42                 | 43                 | 44                 | 45                 |
|                   |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                   |                    |                    |                    |                    |

## ALIGNMENTS

```
A:Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 15-146 <RENE:X
A;Cross-references: EMBL:X69079; NID:9297787; PIDN:CAA48824.1; PID:96573420
B;McKenzie, A.N.; Culpepper, J.A.; de Waal Malefyt, R.; Briere, F.; Punnonen, J.; Ave Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739, 1993
A;Tille: Interleukin 13, a T-cell-derived cytokine that regulates human monocyte and A;Reference number: A47481; MUID:93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A.Cross-references: GDB:138171; OMIM:147683
A.Map position: 5931-5931
A.Map position: 5931-5931
C.Superfamily: interleukin-13
C.Superfamily: interleukin-13
C.Superfamily: interleukin-13 precursor, long splice form #status predicted <PRL>
F.1-146/Product: interleukin-13 precursor, long splice form #status predicted <PRL>
F.15-146/Product: interleukin-13 precursor, short splice form #status predicted <PRL>
F.35-146/Product: interleukin-13 #status predicted <MAT>
F.55-146/Product: interleukin-13 #status predicted <AMAT>
F.55-146/Product: interleukin-13 form #status predicted <PRL>
F.55-63,71,86/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                   M.; Lab
                                                                               C; Species: Homo sapiens (man)
C; Species: Homo sapiens (man)
C; Date: 21-Jan-1994 #sequence_revision 06-Dec-1996 #text_change 22-Jun-1999
C; Accession: 138060; 138061; A47481
R; Minty, A.J.; Chalon, P.; Derocq, J.M.; Dumont, X.; Guillemot, J.C.; Kaghad, M.; Lab a, P.; Caput, D.
A; P.; Caput, D.
A; P.; Caput, D.
A; Caput, D.
A; Caput, D.
A; Caput, D.
A; Reference number: 138060; MUID:93211479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Accession: I38060
A,Status: translated from GB/EMBL/DDBJ
A;Molecule type: mmAA
A;Residues: 1-146 <RES>
A;Residues: 1-146 <RES>
A;Cross-references: EMBL:X69079; NID:g297787; PIDN:CAA48823.1; PID:g580330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 15-146 < MCK>
A; Residues: 15-146 < MCK>
A; Cross-references: GB: L06801; NID: 9186275; PIDN: AAA36107.1; PID: 9186276
A; Experimental source: Con A-activated CD8+ T-cell clone, Al0
A; Note: sequence extracted from NCBI backbone (NCBIP: 129773)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Accession: A47481 A;Status: preliminary; not compared with conceptual translation
                                                 N; Contains: interleukin 13, short form
interleukin-13 precursor - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: GDB: IL13; P600; NC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: I38061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
```

2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60

δy

1;

Gaps

DB 1; Length 146;

68.2%; Score 382.5; DB 1; Length 70.0%; Pred. No. 4.2e-33; Live 11; Mismatches 21; Indels

Conservative

Query Match Best Local Similarity Matches 77; Conserva

us-09-451-527-97.rpr

g

QQ δ

RESULT E30552

```
transcription factor UBF2 - African clawed frog
N;Alternate names: upstream binding factor 2
C;Species: Xenopus laevis (African clawed frog)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 24-Sep-1999
C;Accession: S1196; S17977; S16329
R;Bachvarov, D.; Normandeau, M.; Moss, T.
A;Title: Heterogeneity in the Xenopus ribosomal transcription factor xUBF has a molec A;Reference number: S17196; MUID:91348289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1.31, 'H', '33-701 <MOS>
A; Cross-references: EMBL,X59863; NID:g65264; PIDN:CAA42523.1; PID:g65265
A; Cross-references: EMBL,X59863; NID:g65264; P.H.
R; MCStay, B.; Hu, C.H.; Pikaard, C.S.; Reeder, R.H.
EMBO J. 10, 2297-2303, 1991
A; Title: xUBF and Ribl are both required for formation of a stable polymerase I promo
A; Reference number: S16329; MUID:91293106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Venkatessan, M.M.; Buysse, J.M.; Kopecko, D.J.
Proc. Natl. Acad. Sci. U.S.A. 85, 9317-9321, 1988
A; Title: Characterization of invasion plasmid antigen genes (ipaBCD) from Shigella fl
A; Reference number: A94219; MUID:89057927
A; Accession: C31265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Baudry, B.; Kaczorek, M.; Sansonettí, P.J.
Microb. Pathog. 4, 345-357, 1988
A;Title: Nucleotide sequence of the invasion plasmid antigen B and C genes (ipaB and A;Reference number: A34965; MUID:89200844
A;Accession: B34965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Cross-references: EMBL: J04117; NID: 9152740; PIDN: AAA26523.1; PID: 9152743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41 MYCAALESLINVSDCSAIQRTQRMLKALCSQ....--KPAAGQISSERSRDTKIEVI 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-537,'V',539-668,'D',670-701 <MCS>
A;Cross-references: EMBL:X57561; NID:g65200; PIDN:CAA40794.1; PID:g65201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42K membrane antigen ipaC precursor - Shigella flexner1 plasmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               proteins; HMG box homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Shigella flexneri
C;Date: 30-Jun-1993 #sequence_revision 30-Jun-1993
C;Accession: C31265; B34965; S06204; A60112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 73; DB;
Pred. No. 9.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match 13.0%; Score 73; DB Best Local Similarity 31.8%; Pred. No. 9.9; Matches 21; Conservative 15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Keywords: DNA binding; transcription factor F; 109-184/Domain: HMG box homology <HMG1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted to the EMBL Data Library, May 1991
A; Reference number: S17977
A; Accession: S17977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <HMG3>
                                                                                                                                                                                                                                                                                                         A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <HMG2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     homology
homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           homology
homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unassigned HMG box
                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: EMBL: X59863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                box od
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pox
                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-701 <BAC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-382 <VEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HMG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HWG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : ::||
RFLENL 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S16329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92 QLVKNL 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F; 294-366/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 16-Jul-1999
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 16-Jul-1999
R;Lakkis, Fig.; Cruet, E.N.
Blochem. Biophys. Res. Commun. 197, 612-618, 1993
A;Title: Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13 gene expressic
A;Reference number: 152290; MUID:94092138
A;Reference number: 152290
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Releus: 1-131 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                           n
E
                                                                                                                                                                                                                                                                                          C;Species: Mus musculus (house)
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
C;Accession: B3052
R;Brown, K.D.; Zurawski, S.M.; Mosmann, T.R.; Zurawski, G.
J; Immunol. 142, 679-687, 1989
J;Title: A family of small inducible proteins secreted by leukocytes are members of a sof various activation processes.
A;Reference number: A30552; MUID:89093958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32 TLKELIEELSNITQDQTPLCNGSMVWSVDLAAGGFCVALDSLTNISNCNAIYRTQRILHG 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:L26913; NID:g438875; PIDN:AAA16478.1; PID:g438876 C;Genetics: A;Gene: IL-13 C;Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:M23504; NID:9533246; PIDN:AAA40149.1; PID:9533247
C;Superfamily: interleukin-13
           36 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .,
ص
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 131;
                                                                    61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                     Query Match 52.4%; Score 294; DB 2; Length 131; Best Local Similarity 57.9%; Pred. No. 7.6e-24; Matches 62; Conservative 17; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Score 295.5; DB 2; Length
; Pred. No. 5.3e-24;
16; Mismatches 23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68 LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T-cell activation protein P600 precursor - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52.7%;
59.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 59.29
Matches 61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-131 <BRO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
152290
interleukin-13 - rat
```

ò g ò qq 63

ŏ g à qq RESULT S17196

٠.

us-09-451-527-97.rpr

prod

4;

```
A; Residues: 4-262 <CIT-A; A; Cross-references (CIT-A) (Cross-references (CIT-A) (Cross-references (CIT-A) (Cross-references (CIT-A) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A Molecule type: mRNA
A; Residues: 209-255 KMI>>
A; Cross-references: GB:S5545; NID:g266077; PIDN:AAB25506.1; PID:g266078
A; Cross-references: GB:S5545; NID:g266077; PIDN:AAB25506.1; PID:g266078
B; Maler, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Adv. Exp. Med. Biol. 338, 195-198, 1993
A; Title: Northern blot analysis of sepiapterin reductase mRNA in mammalian cell lines
A; Reference number: IS1849; MUID:94136218
A; Accession: I64799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 1-32; 341-92, 1', 96-124; 126-262 <OYA>
A; Residues: 1-32; 3441-92, 1'; Merner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A; Title: Detection of a novel sepiapterin reductase mRNA: Assay of mRNA in various
A; Reference number: A49174; MUID: 93178546
A; Accession: PHI577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B.L.; Kaufman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Description: catalyzes the NADPH-dependent reduction of sepiapterin to produce C. Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology C; Keywords: acetylated amino end; homodiamer; oxidoreductase F; 9-200/Domain: short-chain alcohol dehydrogenase homology < SADH> F: 1/Modified site: acetylated amino end (Met) #status experimental
                                  enzyme catalyzes the NADPH-dependent reduction of sepiapterin to
                                                                                                            A;Gene: GDB:SPR
A;Cross-references: GDB:128778
A;Cross-references: GDB:128778
A;Map position: 2pl4-2pl2
C;Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology
C;Keywords: NADP; oxidoreductase
F;8-199/Domain: short-chain alcohol dehydrogenase homology <SADH>
F;28-32/Region: pterin binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sepiapterin reductase (EC 1.1.1.153) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 11-Jan-1991 #sequence_revision 07-Jul-1995 #text_change 01-Dec-2000
C;Accession: A36024, A36400; PH1577; I64799; A49174
R;Citron, B.A.; Milstien, S; Gutierrez, J.C.; Levine, R.A.; Yanak, B.L.; Ke
Proc. Natl. Acad. Sci. U.S.A. 87, 6436-6440, 1990
A;Title: Isolation and expression of rat liver sepiapterin reductase CDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16 LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2; Length 261; 5.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.6%; Score 70.5; DB 23.5%; Pred. No. 5.8; ive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12.7%; Score 71; DB 24.7%; Pred. No. 5.1; ive 21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: mRNA
A;Residues: 209-255 <RES>
A;Cross-references: GB:S71374; NID:9557901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A36024; MUID:90349631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 12.73
Best Local Similarity 24.73
Matches 24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A36024
                              C; Comment: This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local 3
                                                                              C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
A; Residues: 20-382 cBAD>
A; Residues: 20-382 cBAD>
A; Residues: 20-382 cBAD>
A; Cross-references: BMBL:M34849; NID:g155327; PIDN:AAA98425.1; PID:g155331
R; Sasakawa, C; Adlerr, B.; Tobe, T.; Okada, N.; Nagai, S.; Komatsu, K.; Yoshikawa, M.
R; Residues: C; Adlerr, B.; Tobe, T.; Okada, N.; Nagai, S.; Komatsu, K.; Yoshikawa, M.
Mol. Microbiol. 3, 1191-1201, 1389
A; Title: Functional organization and nucleotide sequence of virulence region-2 on the land; Reference number: S06201; MUD:90014179
A; Recession: S06204
A; Rocession: S06204
A; Rocession: S06204
A; Residues: 1-29, /T, 31-371, 'T', 373-382 cSAS>
A; Rossicues: EMBL:M319; NID:947062; PIDN:CAA33382.1; PID:947056
R; Sankaran, K.; Ramachandran, V.; Subrahmanyam, Y.V.B.K.; Rajarathnam, S.; Elango, S.; FI Title: Congo red-mediated regulation of levels of Shigella flexneri 2a membrane protein A; Reference number: A60112; MUID:89307550
A; Accession: A60112
A; Molecule type: protein
A; Residues: 20-29, 'X', 31-35, 'X', 37-38, 'X', 49-57, 'X', 59-64;318-335 cSAN>
C; Comment: This protein was found in virulent strains but not in avirulent, invasion-neg tion is associated with the invasion of the bacteria into colonic epithelial cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT . 6

JO1176

Septiagrain reductase (EC 1.1.1.153) - human
C; Species: Home sapiens (man)
C; Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C; Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C; Accession: JO1176; PH1579; I51849
R; Ichinose, H.; Katch, S.; Suecka, T.; Titani, K.; Fujita, K.; Nagatsu, T.
Blochem. Blophys. Res. Commun. 179, 183-189, 1991
A; Title: Cloning and sequencing of CDNA encoding human sepiapterin reductase-an enzyme in A; Reference number: JO1176; MUID:91354248
A; Accession: JO1176; MUID:91354248
A; Molecule type: mRNA
A; Residues: 1-261 *CICHS
A; Residues: 1-261 *CICHS
A; Resperimental source: liver
B; MAiler, J.; Schott, K.; Merner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A; Title: Detection of a novel sepiapterin reductase mRNA: Assay of mRNA in various cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mammalian cell lines an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPDISLODKIDTQRRTYELNTLSAQOKQNIGRATMETSAVAGNISTSGGRYASALE--- 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:S71376; NID:9557903; PIDN:AAD14079.1; PID:94261779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A.Genome: plasmid
C.Superfamily: 42k membrane antigen ipaC
C.Keywords: bacterial virulence; membrane protein
C.Keywords: bacterial virulence; membrane protein
F;1-19/Domain: signal sequence #status predicted <SIG>
F;20-382/Product: 42k membrane antigen ipaC #status experimental <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,Molecule type: mRNA
A,Residues: 208-254 <MAI>
R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Adv. Exp. Med. Biol. 338, 195-198, 1993
A;Title: Northern blot analysis of sepiapterin reductase mRNA
A;Reference number: I51849; MUID:94136218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.7%; Sco...
22.0%; Pred. No. /...
'''e 26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 208-254 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: PH1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: I51849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

ö

7,8-

. 7

ŝ

g

ò

qq

δ

```
CAA for residue 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 transcription factor UBF-1 - African clawed frog
N.Alternate names: upstream binding factor 1
C.Species: Xenopus laevis (African clawed frog)
C.Species: 18-Feb-1994 #sequence_revision 10-Nov-1995 #text_change 24-Sep-1999
C.Accession: S15667
R.Bachvarov, D.; Moss, T.
Nucleic Acids Res. 19, 2331-2335, 1991
A.Title: The RNA polymerase I transcription factor XUBF contains 5 tandemly repeated A.Reference number: S15667; MUID:91252272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                    ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Yu, X.; Zhu, Y.; Ying, H.; Chen, Z.
Chinese J. Blotechnol. 12, 211-214, 1996
A;Title: Molecular cloning, nucleotide sequencing and plant transformation of
A;Reference number: JC1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-May-1997
                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                         -----ASLCNGSMVWSVNLTAGMYCAA 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: bloot,
A; Status: preliminary
A; Status: preliminary
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-677 < dagc>
A; Cross-references: EMBL:X57201; NID:g65189; PIDN:CAA40487.1; PID:g65190
C; Superfamily: unassigned HMG box proteins; HMG box homology
C; Reywords: DNA binding; transcription factor
F; 109-184 / Domain: HMG box homology < dagc>
F; 193-268 / Domain: HMG box homology < dagc>
F; 294-366 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc>
F; 400-471 / Domain: HMG box homology < dagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 MYCAALESLINVSDCSAIQRTQRMLKALCSQ------KPAAGQISSERSRDTKIEVI 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-267 < YUA>
A; Residues: 1-267 < YUA>
A; Experimental source: common strain
A; Note: the authors translated the codon CTT for residue 59 as Val,
C; Superfamily: tobravius 30K protein
C; Keywords: transformation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C.Species: tobacco mosaic virus, TMV
C.Date: 30-Sep-1993 #sequence_revision 21-Jan-1997 #text_change
C.Accession: JC1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14; Indels
                                    29; Indels
                                                                                                                                                                                                                                                                                       44;
                                                                                                                                                                                                                                               46 LESLINVSDCSAIQRTQRMLKAL-CSQKPAAGQISSERSRD 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12.4%; Score 69.5; DB 2; 24.3%; Pred. No. 7.6; iive 21; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16; Mismatches
; Pred. No. 12;
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.5%; Score 70; 30.3%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            movement protein - tobacco mosaic virus
                                                                                                         TPSPTLKELIEELV--NITQNQ---
26.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 12.4
Best Local Similarity 24.3
Matches 25; Conservative
                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 20; Conserva
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360 RFLESL 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92 QLVKNL 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11
                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                               g
                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, N.; O, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda DNA Res. 3, 109-136, 1996
A;Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NID:g1652492; PIDN:BAA17496.1; PID:g165257 to the EMBL Data Library, June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shigella dysenteriae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ς.
Έ
                                                                                                                                                                                                                                                                                                                                                                                                                                               C) Species: Shigella dysenferiae
C; Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 26-Aug-1999
C; Accession: S15578
R; Yao, R.; Palchaudhuri, S.
submitted to the EMBL Data Library, June 1991
A; Description: Nucleotide sequence of the ipaBCD structure genes of Shigella A; Reference number: S15575
A; Reference number: S15578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $77393
cell division protein fts2 - Synechocystis sp. (strain PCC 6803)
C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 25-Apr-1997 *sequence_revision 25-Apr-1997 *text_change 20-Jun-2000
C;Accession: $77393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRH---- 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324. -----EEEQLISQASSKQAEEASQVSKEASQATN----QLIQKLLNIIDNINQSRSST 372
                                                                               21
                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: DNA
A;Residues: 1-382 <TAO>
A;Cross-references: EMBL:X60777; NID:946932; PIDN:CAA43191.1; PID:946936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Superfamily: cell division protein fts2
C;Keywords: cell division; GTP binding
F;161-167/Region: tubulin/Ftsz GTP/GDP-binding (G-G-T-G-[ST]-G) motif
F;262-269/Region: GTP hydrolizing
                                       8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Accession: S77393
A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Length 430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2; Length 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39; Indels
                                                                                                                                                                                                                         68 LCSQKPAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A)Cross-references: EMBL:D90906; GB:AB001339; A;Note: the nucleotide sequence was submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 12.5%; Score 70; Best Local Similarity 21.7%; Pred. No. Matches 28; Conservative 26; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S74322; MUID: 97061201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Superfamily: 42K membrane antigen ipac
                                                                                                                                                                                                                                                                                                                                                                                                                         ipaC protein - Shigella dysenteriae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-430 <KAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               108 -----GNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        373 ASQIAGNIR 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
```

g

q ò q

ò

us-09-451-527-97.rpr

```
A; Closs Interiences, US. A. Camado, G. A. Camado, B. Abreu, F. A.; Acencio, M.; Alvarenga, R. Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R. Briones, M.R.S.; Beano, M.R.P.; Camargo, L.E.A.; Carrarro, D.M.; Carrer as-Netc, E.; Docena, C.; El-Dorry, H.; Facincani, A.P.; Ferreira, A.J.S. submitted to GenBank, June 2000
A, Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Fr J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; La chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins A, Authors: Martins, E.M.F.; Matsukuma, A.Y.; Menork, C.F.F., Miracca, E.C.; Miyaki, C.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Sa, R.G.; Santelli, R.V.; Sawa M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L. A; Gene: XF1614
A; Gene: XF1614
                                                                                                                                                                                                                         Penicillin binding protein XF1614 [imported] - Xylella fastidiosa (strain 9a5c)
C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
C;Accession: F82660
R;anonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Seq Nature 406, 151-157, 2000
A;Title: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MUID:20365717
A;Note: for a complete list of authors see reference number A59328 below
A;Accession: F82660
A;Status: preliminary
A;Molecule type: DnA
A;Residues: 1-494 <SIM>A;Residues: 1-494 <SIM>A;Residues: 1-494 <SIM>A;Cross-references: GB:AE003988; GB:AE003849; NID:99106653; PIDN:AAF84423.1; GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:AC003981; NID:g3063438; PID:g3063447; GSPDB:GN00059; ATSP:F2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypothetical protein F22013.9 - Arabidopsis thaliana (Species: Arabidopsis thaliana (Mouse-ear cress) (C; Species: Arabidopsis thaliana (Mouse-ear cress) (C; Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 22-Oct-1999 (C; Accession: T00714 R; Shinn, P.; Buehler, E.; Dewar, K.; Feng, J.; Kim, C.; Li, Y.; Sun, H.; Conway, A.; eologis, A.; Ecker, J.R. submitted to the EMBL Data Library, April 1998 A; Description: Genomic sequence for Arabidopsis thaliana BAC F22013.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMVWSVNLTAGMYCAALESLINVSDCSAIQRT --- QRMLKALCSQKPAAGQISSERSRDT 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 SMVVFVFVGCGTFCHIKDQTSKKSDASSISRSSLASRLDKIILSNKSTVGSLVALTVRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                          ::||::| | ::|| | 154 VNISSLCALQPYKGWGLYCAGKAARDMLYQVLAAEEPSVRVLSYAPG 200
   63 RMLKALCSQKPAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.2%; Score 68.5; D
30.0%; Pred. No. 20;
ive 11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-559 <SHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 30.09
Matches 21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87 KIEVIQLVKN 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KIGDVLYARN 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene: ATSP: F22013.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Accession: T00714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29
                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
s52110
s52110
scholar in reductase (EC 1.1.1.153) - mouse
C;Species: Mus musculus (house mouse)
C;Decies: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 18-Feb-2000
C;Accession: 55210; PMIS 8
A;Ithle: Mouse seplapterin reductase: an enzyme involved in the final step of tetrahydrc A;Reference number: S52110; MUID:9517853
A;Accession: S52110
A;Reference number: S52110; MUID:9577853
A;Accession: S52110
A;Residues: 1-261 <OTA>
A;Residues: 1-261 <OTA>
A;Residues: 1-261 <OTA>
A;Recence number: A; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A;Ritle: Detection of a novel seplapterin reductase mRNA: Assay of mRNA in various cells A;Reference number: A49174; MUID:93178546
A;Accession: PH1578
A;Accession: PH1578
A;Accession: PH1578
A;Residues: 209-255 <AMI>C;Comment: This enzyme catalyzes the reduction of both C1' and C2' oxo group.
C;Superfamily: riblivitol dehydrogenase; short-chain alcohol dehydrogenase homology
C;Reywords: Oxidoreductase
F;9-200/Domain: short-chain alcohol dehydrogenase homology <SADH>
                                                                                                                                                                                                                                                                                                                                                               crosin (EC 3.4.21.10) precursor - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Dacession: S47538
R;Richardson, R.T.; O'Rand, M.G.
Blochim: Blophys. Acta 1219, 215.218, 1994
A;Title: Cloning and sequencing of cDNAs for rabbit preproacrosin and a novel preproacron A;Reference number: S47538, MUID:9436861
A;Accession: S47538
A;Molecule type: mRNA
A;Residues: 1-431 <RIC>
A;Cross-references: EMBL:U05204; NID:9451841; PIDN:AAA61630.1; PID:9451842
C;Superfamily: acrosin; trypsin homology
C;Superfamily: acrosin; trypsin homology
C;Keywords: glycoprotein; hydrolase; serine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                             127 ITTQDVMKNVWQVLVNIRNVKMSAGFCPLSLEFVAVCIVYSNNIKLGL-----REKITNVR 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
3 VTPSPTLKELIEELVNI--TQNQASLCNGSM-----VWSVNLTAGMYCAALESLINVS 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 VTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.2%; Score 68.5; DB 2; Length 261;
.larity 21.5%; Pred. No. 9.4;
Conservative 26; Mismatches 47; Indels 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48
                                                                                                                                                                            183 DGGPMELTEEVVDEFMEDVPMSIRLAKFRSRTGKKSDVRKGKN 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALES
                                                                                                                                     DCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.4%; Score 69.5; I
llarity 36.4%; Pred. No. 13;
Conservative 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
tes 23; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S:
Matches 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S:
Matches 23,
                                                                                                                              54
                                                               g
                                                                                                                           ò
                                                                                                                                                                                          q
```

ä

```
9
                                   Gaps
Query Match 12.2%; Score 68.5; DB 2; Length 559; Best Local Similarity 28.2%; Pred. No. 23; Matches 31; Conservative 19; Mismatches 37; Indels 23;
                                                                       qq
                                                                         ò
                                      õ
```

Search completed: May 13, 2001, 21:48:39 Job time: 26248 sec

Q

```
3D-STRUCTURE MODELING
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Blood
                                                                                                                     RESULT 1
IL13_HUMAN
                                                                                                                                          May 14, 2001, 06:02:04; Search time 44.64 Seconds (without alignments) 85.178 Million cell updates/sec
                                                                                                                                                                                                                                                                                          homo sapien
                                                                                                                                                                                                                                                                                                 bos taurus
mus musculu
                                                                                                                                                                                                                                                                                                                                                    rattus norv
shigella dy
                                                                                                                                                                                                                                                                                                                        xenopus lae
                                                                                                                                                                                                                                                                                                                                                                           xenopus lae
                                                                                                                                                                                                                                                                                                                                                                                  oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                        mus muscalu
                                                                                                                                                                                                                                                                                                                                                                                                       homo sapien
schizosacch
                                                                                                                                                                                                                                                                                                                                                                                                                             oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tobacco mos
                                                                                                                                                                                                                                                                                                                 rattus norv
                                                                                                                                                                                                                                                                                                                                      homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                   mycobacteri
                                                                                                                                                                                                                                                                                                                                                                                                                                           saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                         tobacco mos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                tobacco mos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tobacco mos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mnscnjn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bacteriopha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    homo sapien
                                                                                                                                                                                                                                                                                                                               shigella fl
                                                                                                                                                                                                                                                                                                                                                                                                                                                  caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rattus norv
                                                                                                                                                                                                                                                                                                                                             salmonella
                                                                                                                                                                                                                                                                                                                                                                   synechocyst
                                                                                                                                                                                                                                                                                                                                                                                                                     thermotoga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autographa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sus scrofa
                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                      1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                 Q9xsv9 | P20109 | P42203 |
                                                                                                                                                                                                                                                                                                                      P25980
P18012
P35270
O52222
P18297
Q03946
P73456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      091275
098746
P38853
060677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P24656
P06348
                                                                                                                                                                                                                                                                                          P35225
                                                                                                                                                                                                                                                                                                                                                                         P25979
P48038
                                                                                                                                                                                                                                                                                                                                                                                              P53067
Q9y613
Q09775
                                                                                                                                                                                                                                                                                                                                                                                                                    P74925
P01870
                                                                                                                                                                                                                                                                                                                                                                                                                                 P96380
P40531
P34574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P14046
                                                                                                                                                                                                                                                                                                                                                                                       064105
                                                                                                                                          93435
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                          93435 segs, 34255486 residues
                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                        IL13_HUMAN
IL13_BOVIN
IL13_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                    MUTL_THEMA
GC_RABIT
MFD_MYCTU
                                                                                                                                                                                                                                                                                                                                                                                                                                        YIEI_YEAST
CLH_CAEEL
MOVP_TMVKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ali3_RAT
Y373_HUMAN
PTP_NPVAC
                                                                                                                                                                                                                                                                                                                      UBF2_XENLA
IPAC_SHIFL
                                                                                                                                                                                                                                                                                                                                          FLHC_SALTY
SPRE_RAT
IPAC_SHIDY
                                                                                                                                                                                                                                                                                                                                                                        UBF1_XENLA
ACRO_RABIT
                                                                                                                                                                                                                                                                                                                                                                                               YGZ1_YEAST
FHOS_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOVP_TMV
MOVP_TMVB
MOVP_TMVRA
KEL1_YEAST
ITAE_MOUSE
                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                     SPRE_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                             YA88_SCHPO
                             - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                   TSZ_SYNY3
                                                                                                                                                                                                                                                                                                                                                                                       PRE_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VR2A_BPT4
                                                                                                                                                                                                                                                                                                                L13_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H1T_PIG
                                                                                                            Gapop 10.0 , Gapext 0.5
                                                                                                                                                       length: 0
length: 2000000000
                                                                        US-09-451-527-97
                                                                                                                                                                                                                                                                   Query
Match Length DB
                                                                                                                                                                                                          SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                            481
510
323
1234
326
1681
268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1167
.725
1477
1539
168
211
                                                                                                                                                                                                                                                                                                                                                                                       261
1004
1164
                                                                                                      BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                               sed
                                                                                                                                                                                                                                                                                        382.5
360.5
295.5
294
                                                                                                                                                                                                                                                                                                                           71.5
                                                                                                                                                                                                                                                                                                                                          70.5
70.5
70
70
70
                                                                                                                                                                                                                                                                                                                                                                               69.5
68.5
68
                                                                                                                                                                                                                                                                                                                                                                                                    67.5
67
67
                                                                                                                                                                                                                                                                                                                                                                                                                          66.5
65.5
65.5
65.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                             64 . 5
64 . 5
64 . 5
63 . 5
63 . 5
63 . 5
                                                                               Perfect score:
                                                                                                                                                                                                                                                                           Score
                                                                                                      Scoring table:
                                                                                                                                                       Minimum DB
Maximum DB
                             OM protein
                                                                                                                                                                                                          Database :
                                                                                      Sequence:
                                            Run on:
                                                                                                                                                                                                                                                                                                               Result
                                                                                                                                                                                                                                                                           ٠
9
                                                                        ritle:
```

|                          | P17480 homo sapien<br>P25977 rattus norv |            |                       |                        |            |
|--------------------------|--|------------|-----------------------|------------------------|------------|
| TYPH_HUMAN<br>AFAM_HUMAN | UBF1_HUMAN<br>UBF1_RAT                   | CLH1_HUMAN | CLH_RAT<br>MYSB_MESAU | MYSB_HUMAN<br>MYSB_PIG | RRPL_TSWV1 |
| пп                       |  |            |                       |                        | -          |
| 482                      | 764                                      | 1675       | 1675<br>1934          | 1935<br>1935           | 2875       |
| 11.2                     | 11.2                                     | 11.2       | 11.2                  | 11.2                   | 11.2       |
| 63                       | 63                                       | 933        | 933                   | 63<br>63               | 63         |
| 34<br>35                 | 37                                       | 360        | 44                    | 43<br>44               | 45         |

## ALIGNMENTS

```
RESULT 1

1113_HUMAN STANDARD; PRT; 132 AA.

Dr. P35225 04564;

Dr. P5821944 (Rel. 28, Created)

Dr. O1-FBR-1994 (Rel. 28, Last annotation update)

Dr. O1-FBR-1994 (Rel. 28, Last annotation update)

Dr. O1-FBR-1994 (Rel. 28, Last annotation update)

Dr. O1-FBR-1994 (Rel. 28, Last sequence update)

Dr. O1-FBR-1994 (Rel. 28, Last annotation update)

Dr. O1-FBR-1994 (Rel. 28, Last annotation update)

No. No. O1-FBR-1994 (Rel. 28, Last annotation update)

No. No. Capeur C. Leplatols C. Leplatols P. Laluarun P. Miloux B. C. A. Shire D. Retrara P. Capeur C. Labion G., Lupker J. Shire D., Ferrara P. Capeur D.;

R. Mature 362:248-250(1993)

R. Nature 362:248-250(1994)

R. Nature 362:248-250(1994
```

```
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
                                    taurus (Bovine)
                                                                                                                                                                                                                                                                                                                                                                           132 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
                                                                       NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                       48
64
38
49
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IL13_MOUSE
P20109;
                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IL13_MOUSE
ID
                                                                                                                                                                                                                                                                                                               CHAIN
                                     Bos
QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ. qq
                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
    (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                  68.2%; Score 382.5; DB 1; Length 132; 70.0%; Pred. No. 3.1e-34; Live 11; Mismatches 21; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 TORMLKALCSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123F1DCAB87FD78B CRC64;
                                                                                                                                  ASTHMA DEVELOPMENT.
SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                A -> R (IN REF. 4)
S -> G (IN REF. 5)
MISSING (IN REF. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              132
                                                                                                                                                                                                                                             EMBL; X69079; CAA48824.1; -.
EMBL; X69079; CAA48823.1; ALT_INIT.
EMBL; U31120; AAB01681.1; -.
EMBL; U10307; AA88738.1; -.
EMBL; AF043334; AAC03535.1; -.
PIR; A47481; A47481.
PDB; 31TR; 15-JAN 95.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IL13_BOVIN
ID IL13_BOVIN STANDARD;
AC Q9XSV9;
DT *30-MAY-2000 (Rel. 39, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .,
ММ
                                                                                                                                                                                                                                     EMBL; L06801; AAA36107.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                45
87
98
14319 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                45
87
98
132 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
nes 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
```

RRANA RRANA

RESULT

ò q Ω P

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [1]
SEQUENCE FROM N.A.
Buitkamp J., Jann O., Fries R.;
Buitkamp J., Jann O., Fries R.;
Buitkamp J., Jann O., Fries R.;
The bovine interleukin-13 gene: genomic organization, chromosomal location and evolution of the promoter.";
Submitted (JAN-1999) to the EMBL/Genbank/DDBJ databases.
-!-FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
SYNERGIZES WITH ILL IN REGULATING INTERFERON-GAMMA SYNTHESIS. MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES (BY PROTECTION OF THE PROPUSE OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 SPVPSATALKELIEELVNITQNQKVPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQ 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 SPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ 59
                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
11-FEB-1998 (Rel. 36, Last annotation update)
1NTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
ILL13 OR IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64.3%; Score 360.5; DB 1; Length 132; 65.8%; Pred. No. 7.1e-32; Live 16; Mismatches 21; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 RTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     723BD42375C161F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY).
SUBCELLULAR LOCATION: SECRETED.
SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
30-MAY-2000 (Rel. 39, Last sequence update) 30-MAY-2000 (Rel. 39, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INTERLEUKIN-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AJ132441; CAB46636.1; -. PROSITE; PS00838; INTERLEUKIN_4_13; 1. Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [1]
SEQUENCE FROM N.A.
MEDLINE-89093958; PubMed=2521353;
                                                                                                                                       INTERLEUKIN-13 PRECURSOR (IL-13).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76 B 90 B 38 N 49 N 75 N 75 N 75 N 14623 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 64.39
Best Local Similarity 65.89
Matches 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC DATE OF THE O
```

m

į.

i

```
Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=8355;
                                                                                                                                                                                                                                                                                                                                                                                               62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UBF2_XENLA P25980;
                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              [3]
DOMAINS.
                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UBF2_XENLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88
                                                                                                                                                                                                                                                                                                                                                                                               Matches
  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                     between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                   fibroblast-derived inflammatory agents, growth factors, and indicators of various activation processes.";
J. Immunol. 142:679-687(1989).
-1- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION. SYNERGIZES WITH ILZ IN REGULATING INTERFEBON-GAMMA SYNTHESIS.
MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IL13_RAT STANDARD; PRT; 131 AA.
92203; 01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1998 (Rel. 36, Last annotation update)
INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
IL13 OR IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lakkis F.G., Cruet E.N.;
"Cloning of rat interleukin-13 (L.13) CDNA and analysis of IL-13
"Cloning of rat interleukin-13 (IL-13) CDNA and analysis of IL-13
gene expression in experimental glomerulonephritis.";
Biochem. Biophys. Res. Commun. 197:612-618(1993).
-i- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
           "A family of small inducible proteins secreted by leukocytes are members of a new superfamily that includes leukocyte and
                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . .) (P
954F93F105713FED CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68 LCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zurawski S.M., Mosmann T.R., Zurawski G.
                                                                                                                     SUBCELLULAR LOCATION: SECRETED.
SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.7%; Score 295.5; DB 1
59.2%; Pred. No. 6.6e-25;
                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.
INTERLEUKIN-13.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-SPRAGUE-DAWLEY; TISSUE-Kidney cortex; MEDLINE-94092138; PubMed=7916615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16; Mismatches
                                                                                                                                                                                                                                                                                                                   PS00838; INTERLEUKIN_4_13; 1.
                                                                                                                                                                                                                                                                                                                                 Cytokine; Glycoprotein; Signa
                                                                                                                                                                                                                                                                                                                                                                                                                                 ΨE,
                                                                                                                                                                                                                                                        EMBL; M23504; AAA40149.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                              14107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                             MGD; MGI:96541; Ill3.
                                                                                                                                                                                                                                                                      E30552; E30552.
                                                                                                                                                                                                                                                                                                        InterPro; IPR001325;
                                                                                                             SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 Similarity
61; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                 HSSP; P35225;
                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 'IL13_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation—
the European Bioinformatics Institute. There are no restrictions on its
use by non-profit institutions as long as its content is in no way
modified and this statement is not removed. Usage by and for commercial
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
NUCLEOLAR TRANSCRIPTION FACTOR 2 (UPSTREAM BINDING FACTOR-2) (UBF-2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
                  MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-91348289; PubMed-1879565;
Bachvarov D., Normandeau M., Moss T.;
Heterogeneity in the Xenopus ribosomal transcription factor xUBF la molecular basis distinct from that in mammals.";
FEBS Lett. 288:55-59(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xenopus laevis (African clawed frog).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
SYNTHESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 wor and Rib 1 are both required for formation of a stable polymerase I promoter complex in X. laevis."; EMBO J. 10:2297-2303(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 RMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INTERLEGICIN-13.

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCUAC. .) (POT

W, E5008CAB8DE8C201 CRC64;
SYNERGIZES WITH IL2 IN REGULATING INTERFERON-GAMMA
                                                                    SUBCELLUIAR LOCATION: SECRETED.
- SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 294; DB 1;
Pred. No. 9.5e-25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               701 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001325; PROSITE; PS00838; INTERLEUKIN_4_13; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cytokine; Glycoprotein; Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14093 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52.48;
57.98;
                                                                                                                                                                                                                                                                                                                                                            EMBL; L26913; AAA16478.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131
80
94
42
53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Xenopodinae; Xenopus.
```

3;

```
SPRE_HUMAN
                                                                                                                                                                                                        [2]
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPRE_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324
        RRYRY RYYRY RRYRY RYYRY RRYRY RYYRY RRYRY RYRY RRYRY R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41 MYCAALESLINVSDCSAIQRTQRMLKALCSQ------KPAAGQISSERSRDTKIEVI 91
                                                                                                          polymerase I transcription.",
Genes Dev. 5:1957-1968(1991).

1- FUNCTION: UDF RECCGNIZES THE RIBOSOMAL RNA GENE PROMOTOR AND
ACTIVATES TRANSCRIPTION MEDIATED BY RNA POLYMERASE I THROUGH
COOPERATIVE INTERACTIONS WITH THE SPECIES-SPECIFIC FACTOR SLI.
IT BINDS SPECIFICALLY TO THE UPSTREAM CONTROL ELEMENT.

1- SUBBNIT: XUBF COMSISTS OF 2 POLYMEPTIDES OF 82 AND 85 KDA,
ENCODED BY THE SAME OR CLOSELY RELATED GENES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA-binding; Activator; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmid 210 kb invasion pWR100, and Plasmid 230 kb pMYSH6000.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                    McStay B., Frazier M.W., Reeder R.H.;
"xUBF contains a novel dimerization domain essential for RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 73; DB 1; Length 701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q -> H (IN REF. 2).
V -> A (IN REF. 2).
D -> E (IN REF. 2).
7795B29BFE88545E2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HMG BOX 1.
HMG BOX 2.
HMG BOX 3.
HMG BOX 4.
HMG BOX 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NoV-1990 (Rel. 16, Created)
01-NoV-1990 (Rel. 16, Last sequence update)
01-NOV-2000 (Rel. 39, Last annotation update)
42 KDA MEMBRANE ANTIGEN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            382 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: NUCLEAR. SIMILARITY: CONTAINS 5 HMG BOXES.
MEDLINE-92038986; PubMed-1936987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82014 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; X57561; CAA40794.1; -. EMBL; X59863; CAA42523.1; -. PIR; S16329. S16329. PIR: S17196. S17196. PIR; S171977; S17977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.0%;
31.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000910; -. Pfam; PF00505; HMG_box; 3. Transcription regulation; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. STRAIN-M90T / SEROTYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      701 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shigella flexneri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : ::11
360 RFLENL 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92 QLVKNL '97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPAC_SHIFL
P18012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA_BIND
DNA_BIND
DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shigella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
IPAC_SHIFL
TDAC_SON
AC P18012
DT 01-NOV
DT 30-NOV
DT 30-NOV
DT 30-NOV
DT 10-NOV
DC 10-N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
    SO THE TATE THE TENT OF THE TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            268 SPDISLODKIDTORRTYELNTLSAQOKONIGRATMETSAVAGNISTSGGRYASALE--- 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ct. Immun. 57:2364-2371(1989).
FUNCTION: ASSOCIATED WITH THE ENTRY OF THE BACTERIA INTO COLONIC
EPITHELIAL CELLS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baudry B., Kaczorek M., Sansonetti P.J.;
Nucleotide sequence of the invasion plasmid antigen B and C genes
(ipab and ipac) of Shigella (lexneri.";
Microb. Pathog 4:345-357(1988).
MEDLINE=89057927; PubMed=3057506;
Venkatesan M.M., Buysse J.M., Kopecko D.J.;
"Characterization of invasion plasmid antigen genes (ipaBCD) from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MISCELLANDOUS: SYNTHESIS OF THIS IMMUNOGEN IS REPRESSED AT 30 DEGREES CELSIUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89307550; PubMed-2663721;
Sankaran K., Ramachandran V., Subrahmanyam Y.V.B.K., Rajarathnam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Elango S., Roy R.K.; "Congo red-mediated regulation of levels of Shigella flexneri 2a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sasakawa C., Adler B., Tobe T., Okada N., Nagai S., Komatsu K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Functional organization and nucleotide sequence of virulence Region-2 on the large virulence plasmid in Shigella flexneri Mol. Microbiol. 3:1191-1201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ED6481B161E58EB1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42 KDA MEMBRANE ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39;
                                                                                                          Proc. Natl. Acad. Sci. U.S.A. 85:9317-9321(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antigen; Plasmid; Virulence; Membrane; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T -> I (IN REF. A -> T (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 2.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 71.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL SEQUENCE OF 20-64 AND 318-335.
                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN=2A; PLASMID=230 kb pMYSH6000;
MEDLINE=90014179; PubMed=2552264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; J04117; AAA26523.1; -.
EMBL; M34849; AAA98425.1; ALT_INIT.
EMBL; X15319; CAA33382.1; -.
PIR; A60112; A60112.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                         STRAIN-M90T / SEROTYPE 5;
MEDLINE-89200844; PubMed-3071655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P35270;
01-FEB-1994 (Rel. 28, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41038 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         membrane proteins.";
                                                                                 flexneri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             382 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                   FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yoshikawa M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query ...
Best Local Similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PA PA
```

4,

S

```
PubMed=10586519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA-binding;
SEQUENCE 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Liver
  STRAIN=LT2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NADPH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPRE RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPRE_RAT
    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                  Ichinose H., Katch S., Suecka T., Titani K., Fujita K., Nagatsu T.; "Cloning and sequencing of cDNA encoding human sepiapterin reductase -- an enzyme involved in tetrahýdrobiopterin biosynthesis."; Blochem. Biophys. Res. Commun. 179:183-189(1991).
-!- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRAHYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16 LVNITONQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIORTORMLKALCSOK:72
                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: CYTOPLASMIC.
DISEASE: DEPRESSED SYNTHESIS OF TETRAHYDROBIOPTERIN MAY PLAY
ROLE IN A VARIETY OF HUMAN DISEASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Salmonella typhimurium.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACETYLATION (BY SIMILARITY)
NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
9C9BF76212826F47 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           163 PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73 PAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG 103
                   01-OCT-2000 (Rel. 40, Last annotation update) SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
FLAGELLAR TRANSCRIPTIONAL ACTIVATOR FLHC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               192 AA
  Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 1.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.7%; Score 71; 24.7%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oxidoreductase; NADP; Acetylation.
                                                                                                                                                                                                                                MEDLINE=91354248; PubMed=1883349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39 N
32 P
28048 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M76231; AAA60314.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002198; -.
Pfam; PF00106; adh_short; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 24.79
Matches 24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: HOMODIMER
(Rel. 28, (Rel. 40,
                                                                                  Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; JQ1176; JQ1176.
MIM; 182125; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261 AA;
                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=602;
01-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FLHC_SALTY
052222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Salmonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOD_RES
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SALTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FLHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
DDT DDT BELLE BELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                            Genes Genet. Syst. 74:105-111(1999).
-!- FUNCTION: TRANSCRIPTIONAL ACTIVATOR. TOGETHER WITH FLHD IT ACTS AS A COMPOUND SIGNA FACTOR THAT ACTIVATE CLASS 2 FLAGELLAR GENES (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE FLHC FAMILY.
                                                                                                                                                                                                                 flagellar master operon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sepiapterin reductase.";
Biochem. Biophys. Res. Commun. 173:627-631(1990).
-!- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYWHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
-!- CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kaufman S.; "Isolation and expression of rat liver sepiapterin reductase CDNA."; Proc. Natl. Acad. Sci. U.S.A. 87:6436-6440(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transcription regulation; Sigma factor; DNA-directed RNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Citron B.A., Milstien S., Gutierrez J.C., Levine R.A., Yanak B.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31 MVWSVNLTAGMYCAALESLINVSDCS---AIQRTQRMLKALCSQKPAAGQISSERS 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oyama R., Katoh S., Sueoka T., Suzuki M., Ichinose H., Nagatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12.6%; Score 70.5; DB 1; Length 192; 28.6%; Pred. No. 1.4; ive 10; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Titani K.;
"The complete amino acid sequence of the mature form of
                                                                                                                                                                                    Kutsukake
Toguchi A., Harshey R.M.;
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21579 MW; C7334C691ECE3F8D CRC64;
                                                                                                                                                                     Yanagihara S., Iyoda S., Ohnishi K., Iino T., "Structure and transcriptional control of the of Salmonella typhimurium.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NoV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=90349631; PubMed=2201030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=91083647; PubMed=2260974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AF029300; AAB96640.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D43640; BAA85315.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 28.6
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StyGene; SG10643; flhc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Flagella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192 AA;
                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10116;
```

;

A22E1D6399EC90BF CRC64;

41098 MW;

382 AA;

```
SEQUENCE
 SO
                                                                                    δ
                                                                                                         q
                                                                                                                                    δ
                                                                                                                                                        QQ
                                                                                                                                                                                  ŏ
                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation the European Bioinformatics. The Three are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                         104 TLGDVSKGFLNIN----DLAEVNNYWALNLTS-MLCLTTGTLNAFSNSPGLSKTVVNISS 158
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -1- FUNCTION: ASSOCIATED WITH THE ENTRY OF THE BACTERIA INTO COLONIC EPITHELIAL CELLS.
                                                                                                                                                                                                                                                                                                                   8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yao R., Palchaudhuri S.; "Nucleotide sequence of the ipaBCD structural genes of Shigella dysenteriae.";
                                                                                                                                                                                                                                                                                            42; Indels 11;
                                                                                                                                                                                                                                                                   Length 262;
                                                                                                                                                                                                        NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
EC992564A0334C61 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY.
KDA MEMBRANE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                 68 LCSOKPAAG---OISSERSRDTKIEVIQLVK---NLLTYVRG 103
                                                                                                                                                                                                                                                                                                                                                                                        159 LCALQPFKGWGLYCAGKAARDMLYQVLAVEEPSVRVLSYAPG 200
                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Membrane; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
42 KDA MEMBRANE ANTIGEN PRECURSOR.
                                                                                                                                                                                                                                                                  12.6%; Score 70.5; DE 23.5%; Pred. No. 2.1; ive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    382 AA
                                                                                                                                                                                              ACETYLATION.
            SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                        InterPro, IPR002198; -.
Pfam; PF00106; adh_short; 1.
Oxidoreductase; NADP; Acetylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-92114800; PubMed-1766387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mol. Microbiol. 5:2217-2221(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY
42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; S15578; S15578.
Antigen; Plasmid; Virulence; Me_SIGNAL.
                                                                                                                                                                                                                                28128 MW;
                                                                                                                                 EMBL; M36410; AAA42130.1; -.
                                                                                                                                                                                                                                                                                            24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
 SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shigella dysenteriae
                                                                                                                                                                                                                                262 AA;
                                                                                                                                              PIR; A36400; A36400
                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmid Invasion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=CG097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPAC_SHIDY
Q03946;
                                                                                                                                                                                                                    DOMAIN
SEQUENCE
                                                                                                                                                                                                          ONIB_GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shigella
                                                                                                                                                                                              MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
IPAC_SHIDY
                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

```
ر.
د
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA RES. 3:109-136(1996).

-!- FUNCTION: THIS PROTEIN IS ESSENTIAL TO THE CELL-DIVISION PROCESS.

ITS SEEMS TO ASSEMBLE HATO A DYNAMIC RING ON THE INNER SURFACE OF THE CYTOPLASMIC MEMBRANE AT THE PLACE WHERE DIVISION WILL OCCUR, AND THE FORMATION OF THE RING IS THE SIGNAL FOR SEPTATION TO BEGIN. BINDS TO AND MYDROLYZES GTP (BY SIMILARITY).

-!- SUBUNIT: AGGREGATE TO FORM A RING-LIKE STRUCTURE (BY SIMILARITY).
                                                                                                                                                                                     324 ------EEEQLISQASSKQAEEASQVSKEASQATN----QLIQKLLNIIDNINQSRSST 372
                                                                                                                                                                                                                                                                         52 VSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRH---- 107
                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!-- SUBCELLULAR LOCATION: CYTOPLASMIC. ASSEMBLE AT THE INNER SURFACE OF THE CYTOPLASMIC MEMBRANE (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE FTSZ FAMILY.
                                                                                                                                                     4 TPSPTLKELIE-----ELVNITQNQ-----ASLCNGSMVWSVNLTAGMYCAALESLIN 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y., Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T., Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura S., Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M., Tabata S.; Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions.",
                                                                                          36;
                               Score 70; DB 1; Length 382;
Pred. No. 3.7;
                                                                                       39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS01134; FTSZ_1; 1.
PROSITE; PS01134; FTSZ_2; 1.
PROSITE; PS01135; FTSZ_2; 1.
Cell division; Septation; GTP-binding.
159  167 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chroococcales; Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              430 AA
                                                                                       26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=97061201; Pubmed=8905231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00091; tubulin; 1.
PRINTS; PR00423; CELLDVISFTSZ.
                            12.5%; 21.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D90906; BAA17496.1; -. HSSP; Q57816; 1FSZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CELL DIVISION PROTEIN FISZ
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000158; -. InterPro; IPR003008; -.
                                                                                                                                                                                                                                                                                                                                                                                                108 ----GNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                           373 ASQIAGNIR 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FTSZ OR SLL1633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=1148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FTSZ_SYNY3
P73456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FTSZ_SYNY3
```

~

Page

```
41 MYCAALESLINVSDCSAIQRTQRMLKALCSQ------KPAAGQISSERSRDTKIEVI 91
                                                                                                                                                                             360 RFLESL 365
                                                                                                                   92 QLVKNL 97
                                                         g
                                                                                                                   ò
                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                      ς.
..
                                                                                                                                                                                                                                 51 SPSPNLKR--DQIVPSNIAKIKVIGVGGGGCNAVNRMIASGVTGIDFWAINTDS---- 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
NUCLEOLAR TRANSCRIPTION FACTOR 1 (UPSTREAM BINDING FACTOR-1) (UBF-1).
                                                                                                                      Gaps
                                                                                                                                                                             -ASLCNGSMVWSVNLTAGMYCAA 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bachvarov D.R., Moss T.;

"The RNA polymerase I transcription factor xUBF contains 5 tandemly repeated HMG homology boxes.";

"The RNA polymerase I transcription factor xUBF contains 5 tandemly nucleic Acids Res. 19:231-2335(1991).

"I-FUNCTION: UBF RECOGNIZES THE RIBOSOMAL RNA GENE PROMOTOR AND ACTIVATES TRANSCRIPTION WEDIATED BY RNA POLYMERASE I THROUGH.

COOPERATIVE INTERACTIONS WITH THE SPECIES-SPECIFIC FACTOR SLI.

IT BINDS SPECIFICALLY TO THE UPSTREAM CONTROL ELEMENT.

SUBUNIT: XUBF CONSISTS OF 2 POLYPEPTIDES OF 82 AND 85 KDA, ENCODED BY THE SAME OR CLOSELY RELATED GENES.

SUBCELLULAR LOCATION: NUCLEAR.

SUBCELLULAR LOCATION: NUCLEAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; S15667; S15667.
InterPro; IPR000910; -
Pfam; PF00505; HGG_box; 3.
PROSITE; PS50090; MYB_3; 1.
Transcription regulation; DNA-binding; Activator; Nuclear protein; Multigene family; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                   28;
                                                      DB 1; Length 430;
                                                                                                             29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASP/GLU-RICH (ACIDIC).
MW; 91340A46AFE7A702 CRC64;
                                                                                                                                                                                                                                                                                                                            46 LESLINVSDCSAIQRTQRMLKAL-CSQKPAAGQISSERSRD 85
                                                                                                             17; Mismatches
                                                      Score 70;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BOX 1.
BOX 2.
BOX 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HMG BOX 3.
HMG BOX 4.
HMG BOX 4.
                                                                                                                                                                       TPSPTLKELIEELV -- NITQNQ -- -- -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=91252272; Pubmed=2041774;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HMG
                                                      12.5%;
26.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X57201; CAA40487.1; -. PIR; S15667; S15667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79168
                                                                               Best Local Similarity 26.7
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=8355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UBF1_XENLA
P25979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA_BIND
DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
SEQUENCE
                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                               UBEL_XENLA
1D UBFL_XENLA
1D UBFL_XENLA
DT 01-MAY
DT 01-MAY
DT 15-JUL
DE NUCLET
CO EUNCHLE
CO CONCOLON
RN MEDIL
RN EMBL
CC COC SEN
CC COC
                                                                                                                                                                                                                                                                                                                                                     103
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                             ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                        CATALYTIC ACTIVITY: HYDROLYSIS OF ARG- AND LYS-BONDS; PREFERENTIAL
                                                                                                                                                                                                                                                       MEDLINE=94368861; PubMed=8086468; Richardson R.T., O'Rand M.G.; Richardson R.T., O'Rand M.G.; Cloning and sequencing of cDNAs for rabbit preproacrosin and a novel preproacrosin-related cDNA."; Blochim Blophys. Acta 1219:215-218(1994).

-: FUNCTION: ACROSIN IS THE MAJOR PROTEASE OF MAMMALIAN SPERMATOZOA.

IT IS A SERINE PROTEASE OF THYSIN-LIKE CLEAVAGE SPECIFICITY, IT IS A SERINE PROTEASE OF THYPESIN-LIKE CLEAVAGE SPECIFICITY, IT IS SYNTHESIZED IN A ZYMOGEN FORM, PROACROSIN AND STORED IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                         CLEAVAGE ARG-XAA >> LYS-LYS >> LYS-XAA.
SUBUNIT: HEAVY CHAIN (CATALYTIC) AND A LIGHT CHAIN LINKED BY TWO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1; ALSO KNOWN AS THE TRYPSIN FAMILY.
                                                                                                                                             Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hydrolase; Serine protease; Glycoprotein; Zymogen; Sperm; Signal.
SIGNAL 1 16 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACROSIN LIGHT CHAIN (BY SIMILARITY).
ACROSIN HEAVY CHAIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHARGE RELAY SYSTEM
CHARGE RELAY SYSTEM
                                                             01-FEB-1996 (Rel. 33, Created)
01-FBB-1996 (Rel. 33, Last sequence update)
10-INOV-1997 (Rel. 35, Last annotation update)
ACROSIN PRECURSOR (EC 3.4.21.10)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INTERCHAIN (BY INTERCHAIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                             STRAIN-NEW ZEALAND WHITE; TISSUE-Testis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACROSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00089; trypsin; 1.
RNINTS; PR00722; CHYMOTYPSIN.
PROSITE; PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_ESR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; U05204; AAA61630.1; -.
                                 STANDARD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001254; -. InterPro; IPR001314; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             431
152
160
87
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFIDE BONDS.
                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                           NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEROPS; S01.223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175
207
234
19
208
86
140
                                                           01-FEB-1996 (
01-FEB-1996 (
01-NOV-1997 (
                                                                                                                                                                                                                                                                                                                                                                                           ACROSOME
                               ACRO_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROPEP
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                              P48038;
RESULT 13
ACRO_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
```

4;

Gaps

16;

14; Indels

16; Mismatches

Conservative

20;

Matches

Similarity

Query Match Best Local

12.5%; Score 70; DB 1; Length 677; 30.3%; Pred. No. 7.3;

æ

```
DR ADD BRANCH BR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way mon-profit at statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send.an email to license@isb-sib.ch).
                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Auerbach G., Herrmann A., Gutlich M., Fischer M., Jacob U., Bacher A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Mouse seplapterin reductase: an enzyme involved in the final step of tetrahydrobiopterin biosynthesis. Primary structure deduced from the
                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \text{Park }Y.S.; 'Cloning of mouse sepiapterin reductase gene and characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maler J., Schott K., Werner T., Bacher A., Zlegler I.; "Northern blot analysis of sepiapterin reductase mRNA in mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Huber R.; "The 1.25.A crystal structure of sepiapterin reductase reveals its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBL_TaxID=10090;
CHARGE RELAY SYSTEM (BY SIMILARITY).
1C015A4E0BC0C668 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lee S.W., Park I.Y., Hahn Y., Lee J.E., Seong C.S., Chung J.H.,
                                                                                                                                              'n.
                                                                                               431
                                                                                                                                            Indels
                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           binding mode to pterins and brain neurotransmitters."; EMBO J. 16:7219-7230(1997).
                                                                                                                                                                                                                   190 PSPTLMEARVDLINL----ELCNSTQWYNGRITASNLCAGYPS 228
                                                                                                                                                                                          48
                                                                                                                                                                                          5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALES
                                                                                                                                            16;
                                                                                             Score 69.5; DB 1;
Pred. No. 4.8;
                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1997 (Rel. 35, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                               Ą
                                                                                                                                         7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochim. Biophys. Acta 1445:165-171(1999)
                                                                                                                                                                                                                                                                                                                                                             261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA sequence.";
Biochim. Biophys. Acta 1260:320-322(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (1.25 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Exp. Med. Biol. 338:195-198(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-99227131; PubMed-10209270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-95178553; PubMed-7873607;
Ota A., Ichinose H., Nagatsu T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 209-261 FROM N.A. MEDLINE-94136218; PubMed-8304109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-98070299; Pubmed-9405351;
                        46422 MW;
                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                             12.4%;
36.4%;
                                                                                                                   Best Local Similarity 36.4 Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lines and tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                                                                                                                                Q64105; Q63996;
01-NOV-1997 (Rel. 35,
01-NOV-1997 (Rel. 35,
01-OCT-2000 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               musculus (Mouse)
238
431 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       promoter region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                             SPRE_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-129
ACT_SITE
SEQUENCE
                                                                                             Query Match
                                                                                                                                                                                                                                                                                                            RESULT 14
SPRE_MOUSE
                                                                                                                                                                                                                                                                                                                                                          ST
                                                                                                                                                                                             ð
                                                                                                                                                                                                                                  Db
```

```
.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (See http://www.lsb-slb.ch/announce/
or send an email to license@lsb-slb.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99 INNAATLGDVSKGFLNVN----DLAEVNNYWALNLTS-MLCLTSGTLNAFQDSPGLSKTV 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 VTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 PTLKELIEELVNITONQASLCNGSMVWSVNLTA-GMYC--AALESLINVSDCSAIORTOR 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HYPOTHETICAL 113.9 KDA PROTEIN IN TAD1-CSE1 INTERGENIC REGION.
                                                                                                                                                                                                                                                                                                                                                                                                               Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1; Length 1004;
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : :||: :| | : :|| | 104 VNISSLCALQPYKGWGLYCAGKAARDMLYQVLAAEEPSVRVLSYAPG 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63 RMLKALCSQKPAAG---QISSERSRDTKIEVIQLVK---NLLTYVRG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vandenbol M., Durand P., Portetelle D., Hilger F.; Submitted (MAY-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1004 AA; 113920 MW; 1F4C02AA6AB2FF39 CRC64;
                                                                                                                                                                                                                                                              NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
D -> G (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                     102294E439CBBAEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38
                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 MLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1004 AA
                                                                                                                                                                                                                                                                                                                                                                                                           12.2%; Score 68.5; D; 21.5%; Pred. No. 3.4; ive 26; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.1%; Score 68; DB 22.7%; Pred. No. 19; tive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                              MGD; MGI:103078; Spr.
InterPro; IPR002198; -
Pfam; PF00106; adh. short; 1.
Oxidoreductase; NADP; 3D-structure.
S77493, AAB33611.1; -. U78077; AAC69364.1; -. U78076; AAC69364.1; JOINED. U78076; AAC69364.1; JOINED. S71375; -: NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-1996 (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                     ΜW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; 249149; CAA89014.1; -. EMBL; 272763; CAA96960.1; -.
                                                                                                                                                                                                                                                                                                                                     27883
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGD; S0003210; KAP114.
Hypothetical protein.
SEQUENCE 1004 AA; 1
                                                                                      1SEP; 13-JAN-99.
1OAA; 16-FEB-99.
1NAS; 30-MAR-99.
                                                                                                                                                                                                                                                                                                                                   261 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YGL241W OR HRC1004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-S288C;
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Simi
Matches 23; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YGZ1_YEAST
P53067;
                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                NP_BIND
                                                                                                                                                                                                                                                                                    DOMAIN
                                                                       EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YGZ1_YEAST
                                                                                                PDB;
                                                                                                                      PDB;
                                                                                                                                               PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

•

Db 533 VIRII------NQVSSDAEEDTNGALMEVLSQVISY 562

Search completed: May 14, 2001, 06:02:05 Job time: 43362 sec

Perfect score:

Title:

Sequence:

protein

ĕ

Run on:

Scoring table:

Searched:

Minimum DB Maximum DB

Database

```
Q95m94 oryza sativ
Q96790 vesicular s
Q98790 vesicular s
Q98x17 caencinabdi
Q9xx16 escherichia
Q9xx16 escherichia
Q9mc4 bacteriopha
Q9113 arabidopsis
O6515 malus domes
O6512 arabidopsis
Q90v02 homo sapien
Q91v02 homo sapien
Q91v03 accepirillu
Q91v03 accepirillu
Q91v14 crimean-con
Q91v14 crimean-con
Q91v14 crimean-con
Q91v15 cobacco mos
Q99746 tobacco mos
                                                   Q9yh07 scyliorhinu
Q9ji78 mus musculu
Q9jh97 mus musculu
   Q9xbm2 acidaminoco
Q9y613 homo sapien
Q9n946 trypanosoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

Yang S., Boroughs K.L., McDermott M.J.;

Yang S., Boroughs K.L., McDermott M.J.;

Canine Interleukin-13: Molecular Cloning of Full-Length cDNA and

Expression of Blologically Active Recombinant Protein.";

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF244915; AAF63204.1; -...

SEQUENCE 131 AA; 14268 MW; 9A142B4D0F80370F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 SPYTPSPTLKELIEELVNITQNQASLCNGSWVWSVNLTAGMYCAALESLINVSDCSAIQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 561; DB 6; Length 1
100.0%; Pred. No. 1.7e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                                                                                                                                                                                                                                                                                  019260
09RH03
09M3D3
09Z1N3
09IWI4
                 09Y613
09N946
09YH07
09JHG7
09SH94
09SH94
09B790
09B790
                                                                                                                                                                                                                     Q9S143
O65152
O44600
Q9JKX5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                    09MCT4
09T1M4
                                                                                                                                                                                                                                                                                        09NV02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel, 13, C
(TrEMBLrel, 13, I
(TrEMBLrel, 15, I
                                                                                                                                                                                      9
10
11
11
                                                                                                                                                                                                                                                                                                        2
2
11
14
14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100. Best Local Similarity 100. Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INTERLEUKIN-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O9TV84
O9TV84;
01-MAY-2000 (
01-MAY-2000 (
09N0W9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT Q9TV84 ID Q9' AC 'Q9' DT 01 DT DT DT DT DT DT
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ogtv84 bos taurus
Ogudc7 homo sapien
O28609 oryctolagus
O28679 vesicular s
O98779 vesicular s
O98791 vesicular s
O98791 vesicular s
O98780 vesicular s
O90781 vesicular s
O90781 vesicular s
O908780 vesicular s
O908780 vesicular s
O908780 vesicular s
O908780 vesicular s
                                                                                                                               (without alignments)
97.134 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29n0w9 canis famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                  1 SPVTPSPTLKELIEELVNIT......QLVKNLLTYVRGVYRHGNFR 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                               May 14, 2001, 06:01:08; Search time 133.94 Seconds
               GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                  374700 segs, 117207915 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                               - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            098787
098789
099089
089048
099020
036414
098778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9MUM4
Q98779
Q9Q8P4
Q98791
Q9M3H8
Q9M3H8
                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9N0W9
Q9TV84
Q9UDC7
Q28609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_rodent:*
sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_fungi:*
sp_human:*
sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_organelle:*
                                                                                                                                                                          US-09-451-527-97
561
                                                                                                                                                                                                                                                                                                                                                                    seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPTREMBL_15:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.3
193.2
193.2
193.2
192.7
192.7
192.2
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
193.3
1
```

ö

9

Score

Result Š. 68.5 68.5 68 67.5

```
SEQUENCE FROM N.A.
STRAIN=NEW ZEALAND WHITE; TISSUE=TESTIS;
MEDLINE=94368861; Pubmed=8086468;
Richardson R.T., O'Rand M.G.;
Cloning and sequencing of Conas for rabbit preproacrosin and a novel preproacrosin-related CDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   190 PSPTLMEARVDLINL-----ELCNSTQWYNGRITASNLCAGYPS-GKIDTCQRLQQLVEV 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRM 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16 LVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAI-----QRTQRMLKAL 68
                    Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=20150907; PubMed=10688199;
Lemieux C., Otis C., Turmel M.;
"Ancestral chloroplast genome in Mesostigma viride reveals an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.2%; Score 74; DB 8; Length 415; 28.4%; Pred. No. 4.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 14.3%; Score 80; DB 6; Length 275; Best Local Similarity 32.3%; Pred. No. 0.58; Matches 20; Conservative 11; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lemieux C., Otis C., Turmel M.;
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases
EMBL; AF166114; AAF43874.1; -
                                                                                                                                                                                                                                                                                                                                                                PROSPERMINOGEN.
8FC2467414069C61 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotany Viridiplantae; Chlorophyta; Prasinophyceae; Chlorodendrales; Mesostigmataceae; Mesostigma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415 AA; 46813 MW; E35116E9692EC782 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
PUTATIVE PLASTID DIVISION PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochim. Biophys. Acta 1219:215-218(1994).
EMBL; U05203; AAA61629.1; -.
HSSP; P00734; 2HNT.
                                                                                                                                                                                                                                                                                         PFAM; PF00089; trypsin; 1.
PROSITE; PS00134; TRYPSIN_HIS; UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
   PUTATIVE PREPROSPERMINOGEN PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           branch of green plant evolution."; Nature 403:649-652(2000).
                                                                                                                                                                                                                                                                                                                                              16 PO
275 PR
29965 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 28.49
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                           INTERPRO; IPR001254; -.
                                                                                                                                                                                                                                                                                                                                            1
17
275 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mesostigma viride.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [2]
SEQUENCE FROM N.A.
                                                                        NCBI_TaxID=9986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chloroplast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       244 LK 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chloroplast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65 LK 66
                                                                                                                                                                                                                                                                                                                                                                CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9MUM4;
                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                               Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9MUM4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 SPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ 59
                    Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
NCBI_TaxID-9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lovett M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-93027259; PubMed=1408833;
Morgan J.G., Dolganov G.M., Robbins S.E., Hinton L.M., Lovett M
"The selective isolation of novel colNas encoded by the regions
surrounding the human interleukin 4 and 5 genes.";
Nucleic Acids Res. 20:5173-5179(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                 DB 6; Length 114;
                                                                                                                                          SEQUENCE FROM N.A.

Trigona W.T., Hirano A., Brown W.;

"Biological activities of interleukin-13 (IL-13) on bovine lymphocytes: implications for signaling through IL-13Ral.";

Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.

EMBL; AF072807; AAD22748.1;

HSSP: P35225;

31TR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 4; Length 49;
                                                                                                                                                                                                                                                                                                                                                                                                                     15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6; Indels
                                                                                                                                                                                                                                                                                                        NON_TER 114 A1, 11355 MW; D8CC56E5627D030A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    679CD23A190C778E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                               59.1%; Score 331.5; DB 6 72.0%; Pred. No. 3.4e-29;
                                                                                                                                                                                                                                                                 INTERPRO; IPR001325; -- PROSITE; PS00838; INTERLEUKIN_4_13; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 87.5; DB (
Pred. No. 0.012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49 AA
                                                                                                                                                                                                                                                                                                                                                                                                                     10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIKRMINALCPHKPSAKQVSSEYVRDTKIEVAQ 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60 RTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
INTERLEUKIN-13 PRECURSOR (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 PVTPSPTLKELIEELVNITQNQ-ASLCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 13, (TrEMBLrel. 13, (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5109 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
15.6%;
Best Local Similarity 71.4%;
Matches 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel. 01, (TrEMBLrel. 01, (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                     67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P.RELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-OCT-2000 (TrEMBLrel.
P600 HOMOLOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P35225;
SEQUENCE 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (
01-NOV-1996 (
01-OCT-2000 (
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09upc7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q28609
Q28609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         090DC7
```

RESULT Q9UDC7

ä

Gaps

9;

Matches

g

ô

early

20;

Indels

RESULT 028609 1D 02 AC 02 AC 01 DT 01 DT 01

qq

5

Gaps 36

42;

Length 350;

82

247

임 ð g

```
45 APTIKENVINGIYSFCENNIVVRDIPHLVEILNNLKHNSVYVCNSNEFWRLYNSLSRFTH 104
                                                                                                                                                                                                                                                                                          105 CKSFFTACMYTIIATLSTLVTLVLSNKLLHAADMIESIESYLFAAQKPPAQELSD--LLE 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLILRGQVMTSDCSSSAKSQN -- SGQSSESPSPSNSPEHASRASASPNLWDLKFTEVQLI 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14 PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 72
                                                                                                                                                                                             ----LIEELVNITQNQASLCNGSMVWSVN----
                                                                                                                                                                                                                                                                     ----LTAGMY--CAALESLINVSDCSAIQRTQRMLKAL----CSQKPAAGQISSERSRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rodriguez L.L., Fitch W.M., Nichol S.T.; "Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus."; Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.8%; Score 72; DB 14; Length 150; 24.2%; Pred. No. 2.2; tive 17; Mismatches 44; Indels 3
                                                                                                                                                       37; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TrEMBLrel. 02, Last sequence update)
PHOSPHOPROTEIN (FRAGMENT).
Vesicular stomatiis virus.
Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae: Vesiculovirus.
NCBL_TAXND=11776.
 Macaulay C., Willer D., Evans D., McFadden G.;
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
EMBL, AF170726; A8F18496.1; -
SEQUENCE 350 AA; 39157 MW; JD9CC2B04ACFCB7F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E3D1095B842ACFFD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
PUTATIVE UDP-GLYCOSE (FRAGMENT).
Cicer arietinum (Chickpea) (Garbanzo).
                                                                                                                    14;
                                                                                                                  13.0%; Score 73; DB 1
22.3%; Pred. No. 4.6;
iive 22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              438 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=1286CRB3;
MEDLINE=97075113; Pubmed=8917539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INTERPRO; IPRO00224; -- PFAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  150 150
150 AA; 16577 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1997 (TrEMBLrel. 02,
                                                                                                                Query Match 13.0
Best Local Similarity 22.3
Matches 29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                        | :| ||:
163 MKYGLINLVQ 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 29; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                               86 TKIEVIQLVK 95
                                                                                                                                                                                             SPTLKE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9M3H8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                098791;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            о9мзнв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             098791
                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
Q98791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09M3H8
     RA
DR
SO
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DT DT OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
188 LIQPNLSTASLC-GAIIWLVALTAGIHWFYLNSILSIGAVTALISLGSQEYQRQRIISFL 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14 PSWIQPVIKENGGERSLSLFPPVGLTQVQTEQWKKIIETVCESSKYWNLSECQIVTSG-N 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Myxoma virus.
Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
Leporipoxvirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
EMBL: U39211; AABSO939.1; -.
INTERPRO: IPRO00224; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PERAIN-LAUSANNE;
MEDLINE-20032073; PubMed=10562494;
MEDLINE-20032073; PubMed=10562494;
Macaulay C., Willer D., Evans D., McFadden G.;
The complete DNA sequence of myxoma virus.";
Virology 264:298-318(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cameron C., Hota-Mitchell S., Chen L., Barrett J., Cao J.-X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13.0%; Score 73; DB 14; Length 150; ilarity 24.2%; Pred. No. 1.7; Conservative 19; Mismatches 42; Indels
                                                                                                                                                                                                                                                                                                      Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
16711 MW; 16D11C4E8E8A65E7 CRC64;
                                                                                                                                                                                                         (TrEMBLrel. 02, Created)
(TrEMBLrel. 02, Last sequence update)
(TrEMBLrel. 13, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                            69 CSOKPAAGQISSERSRDTKIEVIQLVKNLLTYVRG 103
                                                                                                                                                                          AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        350 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN-0888CRB;
MEDLINE-97075113; PubMed-8917539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PFAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, M52L.
                                                                                                                                                                                                                                                                                       Vesicular stomatitis virus.
                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                 PHOSPHOPROTEIN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150 1
150 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-LAUSANNE;
                                                                                                                                                                                                           01-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                  098779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0908P4
0908P4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M052L.
```

RESULT Q9Q8P4

g õ g . ف

Gaps

```
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                   098787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
                                                                           098787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       098789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                       "A putative UDP-Glycose: Flavonoid glycosyltransferase is expressed in chlckpea epicoryls."
Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AJ400861; CAB886666.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLILRGOVMTSDCSSSAKSQN--SGQSSESPSPSNSPEHASRASASPNLWDFKFTEVQLI 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136 PIKPSPGFARLTEPLVEAEKGSHGVIVNSFAELDEGYTEYYENLTGRKVWHVGPTSLMIK 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 TTLEKTDNISNGSSTK--HKCLTWLDTKEPSSVVYISFGSLCS-LSNDQLLELAKGIEAS 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----CNGSMVWSVNLTAGMYC 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44 AALESLINVSDCSAIQRTQRMLKALCSQKPAA-----GQISSERSRDTKIEV---IQLV 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14 PSWTOPVIKENGCERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV 94
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
Fabales; Fabaceae; Papilionoideae; Cicer.
NCBI_TaxID=3827;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30;
                                                                                                                                                                                                                                                                                                                                                                                                                       32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
EMBL: U39212; AAB5040.1; -..
INTERPRO; IPR000224; -..
PFAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.7%; Score 71; DB 14; Length 150; 24.2%; Pred. No. 2.9;
                                                                                                                                                                                                                                                                                                                                                                             Length 438;
                                                                                                                                                                                                                                                                                                                                                                                                                       46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                                                                      OBB7B805BD66E27C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E3D1095B8E8A65FD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                   SEQUENCE FROM N.A.
STRAIN-CV. CASTELLANA; TISSUE-ETIOLATED EPICOTYLS;
Dopico B., Munoz F.J., Labrador E.;
                                                                                                                                                                                                                                                                                                                                                                      ; Score 72; DB 10;
; Pred. No. 7.7;
21; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 PVTPSPTLKELIEELVN-----ITQNQASL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-0986CRB2;
MEDLINE-97075113; PubMed-8917539;
                                                                                                                                                                                                                                                                                                         438 AA; 48662 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150
16611 MW;
                                                                                                                                                                                                                                                                                                                                                                        Query Match 12.8%;
Best Local Similarity 26.7%;
Matches 36; Conservative 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1997 (TrEMBLrel. 02, 01-MAY-2000 (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1997 (TrEMBLrel. 02,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHOSPHOPROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 12.7
Best Local Similarity 24.2
Matches 29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1: :1 |: | 1: | 1: | 253 KHQFLWV--VHRKGD 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95 KNLLTYVRGVYRHGN 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150 150
150 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                 NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
098780
AC 098780
DT 01-FEB-
DT 01-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              098780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73
         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | | : ||||: ::| || |: :|| |: || |CLILRGQVMTSDCSSSAKSQN--SGQSSESPSPSNSPEHASRASASPNLWDFKFTEVQLI 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14 PSWTQPVIKENGGERSLSLFPPVGLTQIQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44; Indels '30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE .....
STRAIN=1187CRB4;
MEDLINE=9707513; PubMed=8917539;
Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
evolution of vesicular stomatitis virus.";
                                                                                                                                                                                                                                                                                                                                                  Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
EMBL: U39219; AAB5047.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 71; DB 14; Length 150;
; Pred. No. 2.9;
17; Mismatches 44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.7%; Score 71; DB 14; Length 150; 24.2%; Pred. No. 2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vesicular stomatitis virus.
Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
                                                                                                                            PHOSPHOPROTEIN (FRAGMENT).
Vesicular stomatitis virus.
Viruses; ssRNA negalive-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150 AA; 16625 MW; D8BCBF97FF435477 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D8BCBF97FF435477 CRC64;
                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17; Mismatches
                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                          STRAIN=1187CRB2;
MEDLINE=97075113; PubMed=8917539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PFAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERPRO; IPRO00224; - PRAM; PF00922; Phosphoprotein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16625 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.78;
24.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1997 (TrEMBLrel. 02, 01-FEB-1997 (TrEMBLrel. 02, 01-MAX-2000 (TrEMBLrel. 13,
                                                                          01-FEB-1997 (TrEMBLrel. 02, 01-MAY-2000 (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHOSPHOPROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 12.7
Best Local Similarity 24.2
Matches 29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29; Conservative
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        150 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=11276;
                                                  01-FEB-1997
```

S

```
RX STATN-BERKELEY;

RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,

Sutron G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,

RA Brandon R.C., Rogers Y.-H.C., Blazel R.G., Champe M., Pfeiffer B.D.,

RA Ballew R.M., Basud A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Ballew R.M., Bencos P.V., Berman B.P., Bhandari D., Bolshakov S.,

RA Borkova D., Botcham M.R., Butler H., Cadleu E., Center A., Chandra I.,

RA Borkova D., Botcham M.R., Butler H., Cadleu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,

RA Borkova D., Botchen A., Borney S., Dankov B.C., Dunn P.,

RA Durbin K.J., Cavley S., Daliker C., Davenport L.B., Davless P.,

RA Goong K., Gorrell J.H., Gu Z., Kennley B.C., Dunn P.,

RA Burtis N.J., Brangelista C.C., Ferraz C., Ferraz C., Ferrain S., Fleischmann W.,

ROOP E., Gorrell J.H., Gu Z., Kennley B.C., Dunn P.,

RA Harris N.L., Harvy D., Heiman T.J., Hernandez J.R., Houck J.,

Jalali M., Kalush F., Karpen G.H., Ke Z., Kennley D., Lai Z.,

Liu X., Mattei B., McIntosh T.C., Morleod M.P., McDherson D.,

RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,

Rales D., R., Nalson K.A., Illy J., Walley R., Shelle M.,

Rales D., Siden-Klamos I., Simpson M., Strong R., Soleeler F., Shen H.,

Spier E., Spradling A.C., Standers R.D.C., Scheeler F., Shen H.,

Ray B.C., Siden-Klamos I., Simpson M., Zhong S., Yang S., Yang S.,

Ray Shier B.C., Store E.W., Rubin G.M., Venter E., Wang A.,

Ray Shier S., Shon K.A., Worley K.C., Wu D., Yang S., Zhu X., Smith H.O.,

Ray Sheng S.H., Woodage T., Worley K.C., Wu D., Yang S., Zhu X., Smith H.O.,

Ray Sheng S.H., Woodage T., Worley K.C., Wu D., Yang S., Zhu X., Shien E., Solence S.B., Shien B.C., Sheng 
                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                      CLILRGOVMTSDCSSSAKSON--SGQSSESPSPSNSPEHASRASASPNLWDFKFTEVQLI 130
                         PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                               CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E2C0AEC7945B9714 CRC64;
                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                               PRT; 1510 AA
                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1510 AA; 169935 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Science 287:2185-2195(2000).
EMBL; AE003504; AAF48686.1; -
FLYBASE; FB9n0030808; CG4937.
                                                                                                                                                                                                                                                                   01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2000 (TrEMBLrel. 14,
                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INTERPRO; IPR000159; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PFAM; PF00620; RhoGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR000198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=7227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-BERKELEY
                                                                                                                                                                                                                                                                                                                                    CG4937 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INTERPRO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                  09VX92
                                                                                                                                                                               09VX92
                                                                                                                                                                                                                                                                                                                                                     CG4937
                                                                                 43
                                                                                                                        73
                                q
                                                                               δ
                                                                                                                   a
```

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                  1177 TLRRIVGHLVFISSQQAKNKMSVQNLTMIWGPTLLAKKSDELIYSQKEADVLSDLVVLYK 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                       8 TLKELIEELVNITQNQA----SLCNGSMVWSVNLTAG-----MY----CAALESLI---- 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSR------DTKIEVIQLV 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Leishmania.
NCBI_TaxID=5664;
                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-90244358; Pubmed-2159527;
Bilsel P.A., Rowe J.E., Fitch W.M., Nichol S.;
Phosphoprotein and nucleocapsid protein evolution of vesicular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30;
                             21;
Length 1510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 70; DB 14; Length 274;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-FRIEDLIN;
Bothe G., Pohl T., Ivens A.C., Quail M., Rajandream M.A.,
Barrell B.G.,
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
                             35; Indels
                                                                                                                                                                                                                                                                                                                Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4D3A014211837D1D CRC64;
                                                                                                                              01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                               51 NVSDCSA--IQRTQRMLKALCSQKPAAGQISS--ERSRDTKI 88
DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Pred. No. 7.4; 20; Mismatches
                Pred. No. 47;
                           14; Mismatches
12.6%; Score 70.5; 31.4%; Pred. No. 47
                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                     01-OCT-2000 (TrEMBLrel. 15, Last and (STRAIN 01/85-PN-B1) PHOSPHOPROTEIN.
                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                         J. VIrol. 64:2498-2504(1997).
EMBL; M31878; AAA48478.1; -
PINTERPRO; PFR000224; -
PFRAM; PF00922; Phosphoprotein; 1.
PRODOM; PD002677; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31169 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HYPOTHETICAL 73.4 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.5%;
23.3%;
                                                                                                                                                                                                                                         01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01,
                                                                                                                                                                                                                                                                                                                                                                                                                                stomatitis virus New Jersey
                                                                                                                                                                                                                                                                                                   Vesicular stomatitis virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 23.33
watches 28, Conservative
                          32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274 AA;
                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=11276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Leishmania major.
Eukaryota; Eugler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRODOM; PI
SEQUENCE
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P1408.01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9N9C4;
                                                                                                                                                                                                               089048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09N9C4
                                                                                                                                                                                   RESULT 14
Q89048
                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                   qq
                                                                                                                                                                                                                ò
                                                                                                               ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          öλ
```

STRAIN-FRIEDLIN;

```
24; Gaps
                                                                                                                                                                                                                                           4 TPS-PTLKELIEELVNITQNQASL-----CNGSMVWSVNLTAGMYCAALESLINVSDC 55
            June 1. Chan Bagherzadeh A., Zhang L., Chan H.M., Smith D.F.;
"A physical map of the Leishmania major Friedlin genome.";
Genome Res. 8:135-145(1998).
EMBL; AS5652; CAB94012.1; -.
Hypothetical protein.
SEQUENCE 670 AA; 73399 Mw; 46942AE667026DIF CRC64;
                                                                                                                                                                                                                                                                                                                                   Query Match 12.3%; Score 69; DB 5; Length 670; Best Local Similarity 24.8%; Pred. No. 27; Matches 27; Conservative 20; Mismatches 38; Indels
                                                                                                                                                                                                                                                                                                                56 SAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGV 104
RA RA REL DR KW KW SO
                                                                                                                                                                                                                                                                          Op
                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                               á
```

Search completed: May 14, 2001, 06:01:11 Job time: 43954 sec

Murine P600. Mus Cytokine signal pe Cytokine signal pe

TIP120. Rattus ra Human ORFX ORF1944 Human interleukin Human heparin-bind Wheat sulfite redu

Gene 38 human secr TIP120. Rattus ra

Human secreted pro

Human platelet der Recombinantly prod Ryanodine receptor Drosophila mitofus

Recombinantly prod A human proliferat

Arabidopsis thalia

Placental-derived

Perfect score:

Sequence:

٠

OM protein

Run on:

Scoring table:

Searched:

Minimum DB Maximum DB

Database

```
Human secreted pro
Flax rust resistan
Flax rust resistan
Rice sulfite reduc
Human secreted pro
Human secreted pro
                                                                                                                                                                                                                                                                                                               Arabidopsis thalia
Arabidopsis thalia
Aquaricine I. The
T.aquaticus Aquari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wonderling RS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-072623/06.
N-PSDB; 255561, 255562, 255563, 255564.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canine interleukin-13 (IL-13) clone 78.
                                                                                                                                                                                       R20641
W62026
R11510
W84067
W84892
Y84892
G06262
G06261
R04585
W69741
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y91434
R85455
R85456
Y58996
Y08621
Y67312
R92795
R27345
R27344
B38312
B38311
W15764
B42180
Y49702
Y21548
Y258998
G35063
                                                                                                                                                                                                                                                                                                                                                                                                                 W69743
R10834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Y58223 standard; Protein; 130 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yang S, Dreitz MJ,
   99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                    6665
112340
12340
12340
12340
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
14414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canis familiaris.
   W09961618-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-DEC-1999
                                                                                                                                                                                                                                                            Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y58223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٦
   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             r58223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canine interleukin
Canine interleukin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canine mature inte
Canine mature inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence of human
Cytokine NC30. F
Sequence of mouse
                                                                                                                  ch time 79.9 Seconds
(without alignments)
93.007 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                        1 MALWLTVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cgn1_8/gcdata/geneseq/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1985_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1986_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1980_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1980_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1980_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcdata/geneseq/geneseqp/An1991_bAT:

cgn1_8/gcgdata/geneseq/geneseqp/An1991_bAT:

                                                                                                                                                                                                                                                                                                                                            390729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A_Geneseq_0401:*
.: /cgn1_8/gcgdata/geneseq/genesegp/AA1980.
:: /cgn1_8/gcgdata/geneseq/genesegp/AA1981.
                   GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                      May 13, 2001, 17:47:35; Search
                                                                                                                                                                                                                                                                                                           390729 seqs, 57163235 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                      protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y58223
Y58221
Y58224
Y58224
Y58222
R48624
R48625
R92794
R92794
R92794
                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                       US-09-451-527-100
658
                                                                                                                                                                                                                                                                                                                                                                              seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0
98.4
84.5
82.9
68.1
67.0
57.4
55.8
55.8
```

2200877

Aqualysin I. Ther SAPAP2 protein. H SAPAP1 protein. H

Rianodin receptor.

Human secreted pro Grapevine leafroll Human ORFX ORF1182

Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease

Claim 3i; Page 237; 264pp; English.

Protein with cytok Human interleukin-Protein with cytok

Human interleukin-

647.58 647.55 545.5 548.8 441 3377.5 367.3

110 98 4 8 2 5 1

Score

Result š. us-09-451-527-100.rag

```
Y58224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y58224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                              ;
0
                      canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine it-4, canine or feline FIL-3 ligand, canine or feline CD40, canine or feline CD40, interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as
                                                                                                         vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
            represent encoded and mature
                                                                                                                                                                                                                                                                                                                                                                                                                  61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYV 120
                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NuCleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                    100.0%; Score 658; DB 21; Length 130; 100.0%; Pred. No. 1.9e-68;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wonderling RS;
                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canine interleukin-13 (IL-13) clone 80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-072623/06.
N-PSDB; 255555, 255556, 255557, 255558.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y58221 standard; Protein; 131 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US11942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
Matches 130; Conservative
                                                                                                                                                                                                                                        and in drug targetting
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 RGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 rgvyrhgnfr 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                               130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cants familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-DEC-1999.
                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sim G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y58221;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
Y58221
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline CD154 (CD40 ligand), canine or feline CD40, canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated immunoregulatory proteins. The proteins, their associated concleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immunor response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTY 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MALWILTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98.4%; Score 647.5; DB 21;
99.2%; Pred. No. 3.2e-67;
1ive 0; Mismatches 0; ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mature interleukin-13 (IL-13) clone 78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wonderling RS;
Claim 3i; Page 231; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Y58224 standard; Protein; 110 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sim G, Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 130; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; 255565, 255566.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120 VRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HESK-) HESKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
```

```
(SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1994-083197/10.
N-PSDB; Q56692.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9404680-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-AUG-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JAN-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R48624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R48624
            \overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}\overset{\times}{\times}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine or feline CD154 (CD40 ligand, canine or feline CD40, canine in the companie CD40 canine or feline CD40, canine IL-13, feline interferon-alpha (IRN-alpha) and feline granulocyte macrophage colony-stimulating factor (GMCSF), and nuclectides warched these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as nucleic acids, specific antibodies and inhibitors may be used as companies for therapeutic or prophylactic regulation of an immune consider, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for and antipodies and to screen for and antipodies and be used in detection, and also activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84.5%; Score 556; DB 21; Length 110; 100.0%; Pred. No. 9.7e-57; ive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canine mature interleukin-13 (IL-13) clone 80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wonderling RS;
                                                                                                                                                                                Claim 31; Page 240; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84.50,
100.0%; Pic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y58222 standard; Protein; 111 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang S, Dreitz MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-US11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0087306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; Z55559, Z55560.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-072623/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 110; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9961618-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and in drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sim G,
PARKEY CONTRACTOR OF A CONTRAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
Sequences Y58221-Y58222 and Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline CD40.

Canine or feline CD154 (CD40 ligand, canine or feline CD40, canine or feline CD40.

Canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage

CC colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated

CC vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans).

They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21 SPVIPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 545.5; DB 21; Length 111;
Pred. No. 1.6e-55;
0; Mismatches 0; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zurawski G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Interleukin-13; lymphokine; immunological disorder; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aversa G, Banchereau J, Briere F, Coffman RL, Cook
Culpepper, Dang W, De Vries J, De Waal Malefyt R;
Doherty TM, Heath A, McKenzie A, Punnonen J, Zuri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence of human interleukin-13 (IL-13).
Claim 31; Page 234; 264pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R48624 standard; Protein; 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82.9%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93WO-US07645.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 82.9
Best Local Similarity 99.1
Matches 110; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and in drug targetting.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Culpepper, Dang W, D
Doherty TM, Heath A,
```

ï

```
60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                      1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                          A novel cytokine produced by T lymphocytes induced by phorbol-2-mayistate-3-acetate and phytohaemaglutinin was coded for by the sequence in clone pSE1-NC30. A second clone was also identified (pSE1-NC30bis) which differed only in the identity of coden 41. The corresponding proteins differ in the amino acid at position 41 which is ather Asp (in NC30) or Gly (in NC30bis). The cytokine acts on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interleukin-13; lymphokine; P600; immunological disorder; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Purified interleukin-13 proteins and antibodies - obtd. using mouse gene encoding related protein P600
                                                                                                                                                                                                                                                                                                                                    67.0%; Score 441; DB 13; Length 146;
                   New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                   26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Banchereau J, Briere F, Coffman RL, C
, Dang W, De Vries J, De Waal Malefyt
M, Heath A, McKenzie A, Punnonen J, 2
                                                                                                                                                                                                                                                                                                                                                      Pred. No. 3e-43;
                                                                                                                                                                                                                                                                                                                                                                    11; Mismatches
                                                                     Claim 1; Page 52-53; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R48625 standard; Protein; 131 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92US-0933416.
93US-0010977.
93US-0012543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93WO-US07645.
                                                                                                                                                                                                                                                                                                                                                      70.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                    92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence of mouse P600.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ::: ::| | |
135 hlkklfregrf 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1994-083197/10
                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                 146 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; Q56693.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Culpepper,
Doherty TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-1992;
29-JAN-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9404680-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diagnostic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aversa G,
                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R48625
                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R48625
   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                 ,;
;;
                                                                                                                                                                                                                                                                                                                                                                                                                      GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                  An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepditor a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                 MALMUTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA
                                                                                                                                                                                                                                                                                                                                                                    Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "putative signal peptide cleavage site"
35.146
/label= NC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note" "putative signal peptide cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note= "putative signal peptide cleavage site"
Purified interleukin-13 proteins and antibodies - obtd. using
                                                                                                                                                                                                                                                                               DB 15; Length 132;
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interleukin; chemotaxis; immunomodulation; inflammation
                                                                                                                                                                                                                                                                                               %; Pred. No. 4e-44;
11; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "putative signal peptide
                 mouse gene encoding related protein P600
                                                                                                                                                                                                                                                                             68.1%; Score 448; 71.0%; Pred. No. 4
                                                   Claime 1; Page 126-127; 135pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R27348 standard; Protein; 146 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 71.0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 hlkklfregrf 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPİ; 1992-325841/40.
N-PSDB; Q28947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cytokine NC30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP506574-A.
                                                                                                                                                                                                                             Sequence
```

R27348;

φ

RESULT

ò g

q à

à

protein

Cooks BG;

.; ;

Gaps

ä

.; ;

19

g

à g

ò g

8 × 0 0 0 0 0 0 0 0 x 8

```
Muteins .1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity of IL-13 or IL-4. They have partial cytokine agonist crivity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-92, R92795-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                                                                                                                                                                                                                                                                 22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-mysistate-3-acctate and phytchaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on monocoytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                  2 pyppstalrelieelvnitqnqkaplcngsmvwsinltagmycaaleslinvsgcsaiek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois.P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                       |||||| | | :|| || ||||||| | ||:|| ::: ::| | | | tgrmlsgfcphkvsagfsslhvrdtkievaqfvkdlllhlkklfreqrf 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                    81 TORMLKALCSOKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chemotaxis, immunomodulation; inflammation.
                                                                                                                                                                                                                                                              DB 17;
                                                                                                                                                                                                                                                              ; Score 377.5; DB 1
; Pred. No. 4.6e-36;
11; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein with cytokine activity encoded by Nal'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein; 112
                                                                                                                                                                                                                                                              57.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92EP-0400858.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 69.77
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SNFI ) ELF SANOFI.
                                                                                                                                                                                                               111 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R27347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; 028944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Interleukin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP506574-A.
                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R27347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R27347
       q
                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XX
                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                                             57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                 An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd from a cDNA library made from a clone of an A10 T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mutein(s) of human and murine cytokine(s), esp. interleukin(s) and murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     an
                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mutein; interleukin-13; IL-13; agonist; antagonist;
therapy; cancer; inflammation; degenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference 64 // Arg at position 64 may be replaced by acidic amino acid, including Asp."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           __note= "Glu at position 11 may be replaced by
amidated amino acid, including Lys"
                                                                                                                                                                                                                               Length 131;
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                         58.5%; Score 385; DB 15; 58.6%; Pred. No. 7.8e-37; ive 19; Mismatches 30;
 Disclosure; Page 128-129; 135pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R92794 standard; Protein; 111 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human interleukin-13 mutein 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94US-0284393.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                    Query Match
Best Local Similarity 58.69
Matches 78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                117 LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                     |:| : ::||| |
119 lsytkqlfrhgpf 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1996-129335/13.
                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                          131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9604306-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zurawski G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R92794;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
```

21;

Mismatches

11;

Conservative

16;

```
Matches
                                                                                                                                     R27346
                                                  Q
                                                                        ŏ
                                                                                           qq
                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                               2,
                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytckine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytckine activity by least about 50% when present at a 100-fold excess. They and other cytckine muteins (see also R92790-92, R92795-802) are useful in the screening of cytckine and cytckine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                  22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                              an
                                                                                                                                                                                                                                                                                                                                                         "Arg at position 64 may be replaced by an acidic amino acid, including Asp"
                               5,
                                                                                                                                                                                                                                                   Cytokine; muteln; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          esp. interleukin(s)
                                                                                                                                                                                                                                                                                                                           "Glu at position 11 may be replaced by
          Length 112;
                                                                                          81 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                      amidated amino acid, including Lys"
                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mutein(s) of human and murine cytokine(s), esp. intermurine P600 contg. amino acid substitutions. - useful diagnosis and treatment of cancer, inflammation, etc.
          Score 367; DB 13;
Pred. No. 7.6e-35;
                            11; Mismatches
                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                  R92793 standard; Protein; 112 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 12; Page 46; 52pp; English.
                                                                                                                                                                                                                                Human interleukin-13 mutein 1.
         55.8%;
69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                  95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                       94US-0284393
                                                                                                                                                                                                            (first entry)
                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zurawski G, · Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                64
/note= "
                                                                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SCHE ) SCHERING CORP.
WPI; 1996-129335/13.
                                                                                                                                                                                                                                                                                                                 Misc-difference 11
                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                 31-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                         WO9604306-A2
                                                                                                                                                                                                           24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                              15-FEB-1996
                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                       R92793
                                                                                                              62
                                                                                                                                                                            qq
                                                                                           δy
```

Length 112;

Score 367; DB 17; Pred. No. 7.6e-35;

55.8%; 69.1%;

Query Match Best Local Similarity

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                         PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                 2 pvppstalrelieelvnitgngkaplcngsmvwsinltagmycaaleslinvsgcsaiek 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on monocytes and B Lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 pvppstalrelieelvnitqnqkaplcngsmvwsinltadmycaaleslinvsgcsaiek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Guillemot J, Kaghad M, Labit-le Bouteiller C; n M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 112;
                                                                                                                                                       81 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54.7%; Score 360; DB 13;
68.2%; Pred. No. 4.9e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                           Protein with cytokine activity encoded by Nal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11; Mismatches
                                                                                                                                                                                                                                                                                      R27346 standard; Protein; 112 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R92795 standard; Protein; 111 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 60; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Leplatois P, Magazin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1992-325841/40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D, Ferrara P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
es 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; Q28943.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interleukin;
                                                                                                                                                                                                                                                                                                                                                                                 24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP506574-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                  R27346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
R92795
ID R92795
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Caput
                                                                                                                                                                                                                                             RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loca
Matches
                                       22
```

R92795;

```
The b4 peptide is a preferred signal peptide to be fused to the N-terminus of the new cytckine. The last two amino acids (Ser-Pro) are opt. absent; when absent the signal peptide is designated b3. See Q28942-Q28947.
                                                                                                                                                                                                                             Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C;
Leplatois P, Magazin M, Minty A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J, Kaghad M, Labit-le Bouteiller C; A;
                                                                                                                                                                                                                                                                                                                                   New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New cytokine having immunomodulatory activity - useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interleukin; chemotaxis; immunomodulation; inflammation.
Interleukin; chemotaxis; immunomodulation; inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.3%; Score 81; DB 13;
85.0%; Pred. No. 0.0093;
iive 0; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                      Claim 12; Page 61; 78pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R27344 standard; peptide; 34 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caput D, Ferrara P, Guillemot
Leplatois P, Magazin M, Minty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                       92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92EP-0400858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91FR-0003904.
                                                                                                                                          91FR-0003904
92FR-0000137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytokine signal peptide b2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MALWLTVVIALTCLGGLASP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 malllttvialtclggfasp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 12.3
Best Local Similarity 85.0
Matches 17; Conservative
                                                                                                                                                                                                                                                                                  WPI; 1992-325841/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1992-325841/40.
N-PSDB; Q28941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SNFI ) ELF SANOFI.
                                                                                                                                                                                            (SNFI ) ELF SANOFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 AA;
                                                                                                                                                                                                                                                                                                    N-PSDB; Q28941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-JAN-1992;
                                                                                                     27-MAR-1992;
                                                                                                                                                        08-JAN-1992;
                                                                                                                                        29-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-SEP-1992
                                                                     30-SEP-1992
                                  EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP506574-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R27344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R27344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 prsvslpltkelieelsnitgdetplcngsmvwsvdlaaggfcvaldsltnisncnaiy 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muteins of mouse, P600 (R92795) contain amino acid substitutions at amino acid position 67 in helix C. They are obtd. by site-directed mutagenesis of natural P600 sequences. The muteins antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92796-94), R9796-803) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
                                                                                                   Cytokine; mutein; P600; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease.
                                                                                                                                                                                                                           /note= "Arg at position 67 may be replaced by an
acid amino acid, including Asp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mutein(s) of human and murine cytokine(s), esp. interleukin(s) murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45.9%; Score 302; DB 17; Length 111;
llarity 55.5%; Pred. No. 2.5e-27;
Conservative 18; Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80 RTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                            .
Misc-difference 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 12; Page 46; 52pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R27345 standard; peptide; 20 AA.
                                                                                                                                                                                                                                                                                                                                                                                      94US-0284393.
                                                                                                                                                                                                                                                                                                                                                     95WO-US08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytokine signal peptide b4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zurawski SM;
                                                                                                                                                                                                                                                                                                                                                                                                                        (SCHE ) SCHERING CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1996-129335/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
hes 61; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  111 AA;
                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                WO9604306-A2
                                                                                                                                                                                                                                                                                                                                                                                      01-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-FEB-1993
                                                                                                                                                                                                                                                                                                                                                   31-JUL-1995;
                                24-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zurawski G,
                                                                   Murine P600
                                                                                                                                                                                                                                                                                                                 15-FEB-1996
```

A PART OF THE PROPERTY OF THE

Seguence

Query Match

20 Matches

qq δ RESULT 13 R27345

0;

Gaps

ó

```
The polynucleotide sequences given in C69455 to C69502 encode the human secreted proteins given in B38203 to B38250. B38251 to B38320 represent human secreted polypeptide sequences and proteins homologous to them, which are given in the exemplification of the present invention. Human secreted proteins have activities based on the tissues and cells the genes are expressed in. Example of activities include: immunosuppressive; antiatrhritic; antirheumatic; antiproliferative; cytostatic; cardiant; virucide; fungicide; and ophthalmological. The polymolective; antibacterial; virucide; fungicide; and ophthalmological. The polymolectides and polymolective in menson and polymolective in the polymolectides and confolicient of prevent, treat or amelicate a medical confolicient or sheep. They are also used in diagnosing a pathological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; secreted protein; diagnosis; immunosuppressive; antiarthritic; antirheumatic; antiproliferative; cytostatic; cardiant; vasotropic; cerebroprotective; nootropic; neuroprotective; antibacterial; virucide; fundicide; ophthalmological; gene therapy; autoimmune disease; infection; hyperproliferative disorder; cardiovascular disorder; angiogenesis; celebrovascular disorder; nervous system disorder; ocular disorder; wound healing; skin aging; food additive; preservative.
                                                                                                                                                                                                                                                                              Gaps
                                                                           The b2 peptide is a preferred signal peptide to be fused to the N-terminus of the new cytokine. The last two amino acids (Ser-Pro) are opt. absent; when absent the signal peptide is designated bl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isolated nucleic acid molecule encoding a human secreted protein used in preventing, treating or ameliorating a medical condition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human secreted protein sequence encoded by gene 38 SEQ ID NO:168.
                                                                                                                                                                                                                                                                              ;
0
treating tumours and infectious or inflammatory conditions
                                                                                                                                                                                                                                    12.3%; Score 81; DB 13; Length 34; 85.0%; Pred. No. 0.019; ive 0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 407-409; 416pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Komatsoulis G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     B38312 standard; Protein; 665 AA.
                                      Claim 12; Page 61; 78pp; French
                                                                                                                                                                                                                                                                                                                   1 MALWLTVVIALTCLGGLASP 20
                                                                                                                                                                                                                                                                                                                                       ||| || || ||||||||| ||| malllttvialtclggfasp 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2000; 2000WO-US07579.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-MAR-1999; 99US-0126509.
07-JAN-2000; 2000US-0174853.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-594642/56
                                                                                                                                                                                                                                                        Best Local Similarity
Matches 17; Conserv
                                                                                                                    are opt. absent; wl
See Q28942-Q28947.
                                                                         The b2 peptide is
                                                                                                                                                                           34 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200058469-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-0CT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rosen CA,
                                                                                                                                                                               Seguence
                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                 15
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
ŝ,
condition or susceptibility to a pathological condition. Disorders which are diagnosed or treated include autoimmune diseases, hyperproliferative disorders, cardiovascular disorders, cerebrovascular disorders, andiovances, cardiovascular disorders, infections caused by bacteria, viruses and fungi and ocular disorders. The polypeptides can also be used to aid wound healing and epithelial cell proliferation, to prevent skin aging due to sunburn, to maintain organs before transplantation, for supporting cell culture of primary tissues, to regenerate tissues and in chemotaxis. The polypeptides can also be used as a food additive or preservative to increase or decrease storage capabilities. C69446 to C69454 and B38202 represent sequences used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                               NLTAGMYCAALES --- LINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITONOASLCNGSMV-----WSV 55
                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                  Score 79; DB 21; Length 665; Pred. No. 1.9;
                                                                                                                                                                                                                                                                                                                                                                               51; Indels
                                                                                                                                                                                                                                                                                                                                                                               19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: May 13, 2001, 17:47:36
Job time: 12336 sec
                                                                                                                                                                                                                                                                                                                                  12.0%;
31.2%;
                                                                                                                                                                                                                                                                                                                                                                               39; Conservative
                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                                                                                                                                                                                                                  present invention.
                                                                                                                                                                                                                                                                             665 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 VKNLL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |::|
vrspl
                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            595
      222222222222X8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

```
TELECOMDUNCATION INFORMATION:
TELEPHONE: 415-82-9196
TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 132 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-012-543-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 16, Appl
                                                                                                                  May 13, 2001, 17:48:32 ; Search time 42.06 Seconds (without alignments) 59.377 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16, Appl
8, Appli
6, Appli
7, Appli
5, Appli
107, App
10, Appli
10, Appli
16, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Appl
Appli
, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                            658
1 MALWITVVIALTCLGGLASP.....QLVKNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 25, Sequence 25, Sequence 27, Sequence 5, Al Sequence 5, Al Sequence 4, Al Sequence 4, Al Sequence 11, Al Sequence 6, Al Sequence 16, Al Se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                     185757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgnl_7/ptodata/1/iaa/SA_COMB.pep:*
/cgnl_7/ptodata/1/iaa/SB_COMB.pep:*
/cgnl_7/ptodata/1/iaa/GA_COMB.pep:*
/cgnl_7/ptodata/1/iaa/GB_COMB.pep:*
/cgnl_7/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgnl_7/ptodata/1/iaa/PCTUS_COMB.pep:*
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-012-543-2
PCT-US93-07645x-2
PCT-US93-07645x-2
PCS-08-371-121-16
US-08-371-121-25
PCT-US93-07645x-4
PCT-US93-07645x-4
PCT-US93-07645x-4
PCT-US93-07645x-4
US-08-284-3938-5
US-08-284-3938-15
US-08-284-3938-15
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-284-3938-16
US-08-371-121-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US95-04589-107
US-08-310-912A-107
US-08-930-996A-10
US-08-770-544-16
                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-371-121-7
                                                                                                                                                                                                                                                                                                                                                          185757 segs, 19210857 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                          Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                         US-09-451-527-100
                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match Length
                                                                                                                                                                                                                                                                                             BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing:
                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                 Perfect score:
                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                      Seguence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š.
```

| Sequence 6, Appli<br>Sequence 12, Appli<br>Sequence 12, Appl<br>Sequence 12, Appl<br>Sequence 12, Appl<br>Sequence 12, Appl<br>Sequence 12, Appl<br>Sequence 12, Appli<br>Sequence 2, Appli<br>Sequence 2, Appli<br>Sequence 2, Appli<br>Sequence 1, Appli<br>Sequence 1, Appli<br>Sequence 13, Appli<br>Sequence 14, Appli<br>Sequence 16, Appli<br>Sequence 17, Appli<br>Sequence 17, Appli<br>Sequence 18, Appli<br>Sequence 19, Appli<br>Sequence 19, Appli |  |  |
|---|--|--|
| 3 US-09-041-889-6<br>3 US-08-837-058-6<br>2 US-08-484-1588-12<br>2 US-08-484-1588-12<br>2 US-08-480-150A-12<br>2 US-08-480-150A-12<br>3 US-08-480-150A-12<br>3 US-08-489-223A-12<br>3 US-08-149-223A-12<br>3 US-08-188-579-85<br>5 PCT-US96-13156-2<br>1 US-08-666-349-2<br>2 US-08-693-228-10<br>1 US-08-486-0378-2<br>1 US-08-993-228-10<br>2 US-08-993-228-10<br>3 US-08-993-228-10<br>4 US-08-565-21A-2<br>4 US-08-565-21A-3<br>5 US-08-565-21A-3<br>6 US-08-565-21A-3<br>7 US-08-565-21A-3<br>8 US-08-956-25-10  | rcation US/08012543  1207  11pepper, Janice Kenzie, Andrew ng, Warren ng, Warsen sath, Andrew eersa, Gregorio eersa, Gregorio eersa, Gregorio rerwski, Gerard Trows, Human Interleukin-13 FENCES: 27 SADDRESS: 27 DNAX Research Institute 1 California Avenue 1 California | :-1992<br>TION:<br>P. 34,090<br>BER: DX0302K1  |
| .5 10.0 206<br>.5 10.0 206<br>.5 10.0 426<br>.5 9.8 496<br>.6 9.7 1754<br>.6 9.7 1754<br>.6 9.7 1754<br>.6 9.7 1754<br>.7 9.5 88   | pplication 96072 Culpepper McKenzie, Dang, War de Wah, An Heath, An Heath, An Aversa, G Briese,  | : 21-AUG-<br>I INFORMAT<br>F, Edwin F<br>N NUMBER:<br>OCKET NUME                           |
| 28<br>29<br>31<br>31<br>31<br>31<br>31<br>31<br>31<br>31<br>31<br>31  | RESULT  US-08-012-543-2  Sequence 2, App  Patent No. 5596  GENERAL INFORM  APPLICANT: AP | ; FILING DATE ; ATTORNEY/AGEN ; NAME: Chin, ; REGISTRATIO) ; REFERENCE/DO ; TELECOMMUNICA' |

Human Interleukin-13

```
FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: G
APPLICANT: L
APPLICANT: M
APPLICANT: K
APPLICANT: K
APPLICANT: K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
US-08-371-121-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                     - 61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120
                                                                                                                 Gaps
                                                                                               1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;;
                                 Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 132;
                                                              25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 68.1%; Score 448; DB 5; Length 13 Best Local Similarity 71.0%; Pred. No. 3.8e-47; Matches 93; Conservative 11; Mismatches 25; Indels
                           Ouery Match
Best Local Similarity 71.0%; Pred. No. 3.8e-47;
Matches 93; Conservative 11; Mismatches 25
                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
TITLE OF INVENTION: Human Interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM: Macintosh 6.0.5
                                                                                                                                                                                                                                                                                                                    RESULT 2
PCT-US93-07645A-2
; Sequence 2, Application PC/TUS9307645A
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
FILING APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 2, Application PC/TUS9307645; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Medintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 07,
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 132 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
                                                                                                                                                                                                                                  119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                         121 HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT-US93-07645A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
PCT-US93-07645-2
                                                                                                                                g
G
                                                                                                                                                                                                 g
                                                                                                                                                                  ò
                                                                                                                                                                                                                                  ογ
                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

```
Protein having a cytokine type activity, recombinant DNA coding for this protein, transformed cells and microorganisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.1%; Score 448; DB 5; 71.0%; Pred. No. 3.8e-47; ive 11; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LABIT-LE BOUTEILLER, Christine MAGAZIN, Marilyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3000 K Street, N.W., Suite 500
                                                                                 OPERATING SYSTEM: Macintosh 6.0.5 SOFTWARE: Microsoft Word 5.1a CURRENT APPLICATION DATA: APPLICATION NUMBER: PCT/US93/07645 FILING DATE: 19930818
                                                                                                                                                                                                                 APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                       FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FERRARA, Pascual
GUILLEMOT, Jean-Claude
LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMFUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 16, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FOLEY & LARDNER
                                                               COMPUTER: Apple Macintosh OPERATING SYSTEM: Macintos
                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                              : 132 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KAGHAD, Mourad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MINTY, Adrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear; MOLECULE TYPE: protein PCT-US93-07645-2
                                                                                                                                                                          FILING DATE: 1993081: PRIOR APPLICATION DATA:
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ::: ::| | |
121 HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: CAPUT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20007-5109
```

5

```
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GUILLENOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: LABIT-LE BOUTELLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
CORRESPONDENCES: 27
ADDRESSENDER ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                       ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Re-lease #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58.5%; Score 385; DB 1;
58.6%; Pred. No. 1.8e-39;
tive 19; Mismatches 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 3000 K Street, N.W., Suite 500 CITY: Washington, D.C.
                                                                                                                                                                               APPLICATION NUMBER: US/08/012,543
CLASZIPECATION: 435
CLASZIPECATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REGISTRATION NUMBER: 34,090
RECISTRATION NUMBER: 34,090
TELECOMMUNICATION INFORMATION:
TELECHONE: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 25, Application US/08371121
Patent No. 5652123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FOLEY & LARDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 131 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 58.61
Matches 78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-012-543-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |:| ': ::||| ·|
119 LSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117 LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
US-08-371-121-25
    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 67.0%; Score 441; DB 1; Length 146; Best Local Similarity 70.2%; Pred. No. 3.2e-46; Matches 92; Conservative 11; Mismatches 26; Indels
Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Aversa, Gregorio
APPLICANT: Briere, Francine
APPLICANT: Banchereau, Jacques
APPLICANT: de Vries, Jan
APPLICANT: CLTANSKI, Gerard
APPLICANT: ALTANSKI GERARD
NUMBER OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 27
                                                                               PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
FILLING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN-1992
PRIOR APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR-1991
ATTORREY/AGENT INFORMATION:
NAME: SAXE, BATCHAR D.
REGISTRATION NUMBER: 18,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application US/08012543
Patent No. 5566072
GENERAL INFORMATION:
APPLICANT: Culpepper, Janice
APPLICANT: McKenzie, Andrew
APPLICANT: Marren
APPLICANT: Heath, Andrew
                  CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (202) 672-5300
TELERX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
LENGTH: 146 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Rese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135 HLKKLFREGRF 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-371-121-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-012-543-4
```

g

D õ

Ор ô

3

ä

Gaps

```
57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                        1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                58.5%; Score 385; DB 5; Length 131; 58.6%; Pred. No. 1.8e-39; Live 19; Mismatches 30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s; Score 385; DB 5;
s; Pred. No. 1.8e-39;
19; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Human Interleukin-13
MUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
                   APPLICATION NUMBER: US 07/933416
FILING DATE: 1-140G-1992
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application PC/TUS9307645 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Microsoft Word 5.1a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58.5%;
58.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ ID NO: 4
                                                                                                      : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                 Best Local Similarity 58.6
Matches 78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 58.59
Best Local Similarity 58.69
Matches 78; Conservative
  PRIOR APPLICATION DATA:
                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117 LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119 LSYTKOLFRHGPF 131
                                                                                                                                                inear
                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                  PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
PCT-US93-07645-4
                                                                                                      LENGTH:
                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ά,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 LAAGGFCVALDSLINISNCNAIYRTQRILHGLCNRKAPTTVSS--LPDTKIEVAHFITKL 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30; Indels
                     PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58.5%; Score 385; DB 1; 58.6%; Pred. No. 1.8e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                               APPLICATION NUMBER: PCT/FR92/00280
FILING DATE: 27-MAR.1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137
FILING DATE: 08-JAN 1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904
FILING DATE: 29-MAR.1991
ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERTHARD D.
REGISTRATION NUMBER: 28,655
                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 16781/383 FELECOMMUNICATION INFORMATION:
                                                                                                                                     APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/0028
                                                           US/08/371;12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application PC/TUS9307645A GENERAL INFORMATION:
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (202) 672-5399
TELEEX: 904136
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (202) 672-5300
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : 131 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ) MOLECULE TYPE: protein US-08-371-121-25
                                  CURRENT APPLICATION DATA
                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117 LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |:| : ::||| |
|119 LSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 78; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US93-07645A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
```

qq ò a õ ;;

Gaps

```
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                               CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0389
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/08284393B Patent No. 5696234 GENERAL INFORMATION:
                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-AUG-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 111 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 57.4 Best Local Similarity 69.7 Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 94304-1104
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
FILING DATE: 01-AUG
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 901 Califo
CITY: Palo Alto
STATE: California
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                           94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 94304-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US95-08950-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 TORMLKALCSOKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC competible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 57.4%; Score 377.5; DB 1
Best Local Similarity 69.7%; Pred. No. 1.2e-38;
Matches 76; Conservative 11; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              омыек: US/08/284,393B
01-AUG-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: DX0389
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 5, Application PC/TUS9508950 GENERAL INFORMATION:
                                                                                                                                                                  Sequence 5, Application US/08284393B Patent No. 5696234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 111 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Ching, Edwin P. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: peptide
                   117 LTYVRGVYRHGNF 129
                                           |:| : ::||| |
119 LSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
FILING DATE: 01-AUG
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
PCT-US95-08950-5
                                                                                                                                             US-08-284-393B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-284-393B-5
                   ò
                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

Η;

```
22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 PVPPSTALRELIEELVNITQNOKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81 TORMLKALCSOKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 TQRMLSGFCPHKVSAGFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57.4%; Score 377.5; DB 5;
69.7%; Pred. No. 1.2e-38;
iive 11; Mismatches 21;
```

```
US-08-284-393B-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-284-393B-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-1
 Matches
                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                      Q
                                                                                                               δ
                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                     ;
;
                                                                                                                                                                                                                                                                                                                                                                2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                         22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                   81 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                  Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                         21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                              55.8%; Score 367; DB 1; 69.1%; Pred. No. 2.3e-37; iive 11; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: PCT/US95/08950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/284,393
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4, Application PC/TUS9508950 GENERAL INFORMATION:
REFERENCE/DOCKET NUMBER: DX0389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34,090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REPERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
               TELECOMMUNICATION INFORMATION TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 112 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112 amino acids
                                                                                                                                                                                                                                                                                  Best Local Similarity 69.1 Matches 76; Conservative
                                                    TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                  415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415-496-1200
                                                                                                                           TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                              , MOLECULE TYPE: peptide US-08-284-393B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Palo Alto
STATE: California
                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US95-08950-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH:
                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

Length 112;

Score 367; DB 5; Pred. No. 2.3e-37;

55.8%; 69.1%;

Query Match Best Local Similarity

```
2,
                                               22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                            2 PVPPSTALRELIEELVNITQNQKAPICNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 PVPPSTALRKLIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 111;
                                                                                                                                                    81 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                 62 TQDMLSGFCPHKVSAGFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81 TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                        Sequence 15, Application US/08284393B
Patent No. 5696234
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/284,393B FILING DATE: 01-aug-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 55.7%; Score 366.5; DB 1; Best Local Similarity 67.9%; Pred. No. 2.6e-37; Matches 74; Conservative 12; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08371121
Patent No. 5652123
GENERAL INFORMATION:
APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: DY
TELECOMMUNICATION INFORMATION
TELEPHONE: 415-852-9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 01-AUG-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 111 amino acids
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415-496-1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Palo Alto
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
```

TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES NUMBER OF SEQUENCES: 16 CORRESPONDENCE ADDRESS: ADDRESSE: ANDRESSE: 901 California Avenue

APPLICANT: Zurawski, Sandra M. APPLICANT: Zurawski, Gerard

COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:

ZIP: 94304-1104 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk

CITY: Palo Alto STATE: California

COUNTRY:

APPLICATION NUMBER: US/08/284,393B FILING DATE: 01-AUG-1994 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION: NAME: Châng, EGMân P. REGISTRATION NUMBER: 34,090

REFERENCE/DOCKET NUMBER: DX TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196 TELEFAX: 415-496-1200

LENGTH: 112 amino acids TYPE: amino acid SEQUENCE CHARACTERISTICS:

```
Sequence 14, Application US/08284393B Patent No. 5696234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: 14:
                                                                         GENERAL INFORMATION:
US-08-284-393B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Óγ
                                                                                                             APPLICANT: MAGAZIN, Marilyn TTTE OF INVENTION: Protein having a cytokine type TTTE OF INVENTION: Protein having a cytokine type TITLE OF INVENTION: activity, recombinant DNA coding for this protein, TITLE OF INVENTION: transformed cells and microorganisms.

UNMBER OF SEQUENCES: 27

CORRESPONDENCE ADDRESS:
ADDRESSE: FOLEY & LANDNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: /label- xaa
OTHER INFORMATION: /note- "amino acid is Asp or Gly'
                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
WEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
APPLICATION NUMBER: US/08/371,121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 54.7%; Score 360; DB 1; Best Local Similarity 68.2%; Pred. No. 1.6e-36; Matches 75; Conservative 11; Mismatches 22;
                                           MINTY, Adrian
KAGHAD, Mourad
LABIT-LE BOUTEILLER, Christine
                                                                                                                                                                                                                                                                              STREET: 3000 K Street, N.W., Suite 500 CITY: Washington, D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATE:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PR 91 00137
FILING DATE: 27-MAR-1992
PRIOR APPLICATION NUMBER: FR 91 00137
FILING DATE: 29-MAR-1992
PRIOR APPLICATION NUMBER: PR 91 03904
FILING DATE: 29-MAR-1991
APPLICATION NUMBER: PR 91 03904
FILING DATE: 29-MAR-1991
APPLICATION NUMBER: 28,665
REFERENCE/DOCKET NUMBER: 16781/383
TELECOMMUNICATION INMBER: 16781/383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT/FR92/00280
GUILLEMOT, Jean-Claude
                        LEPLATOIS, Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acids TOPOLOGY: 112 amino acids TOPOLOGY: 112 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (202) 672-53(
(202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                    20007-5109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-371-121-1
```

```
'n
                                                                                                                                                                                                                            2; Gaps
                                                                                                                                                                                                                                                                             22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
                                                                                                                                                                                                                                                                                                            2 PVPPSTALRKLIEELVNITYQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
                                                                                                                                                                                                                                                                                                                                                                                        81 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 54.1%; Score 356; DB 1; Length 112; Best Local Similarity 67.3%; Pred. No. 5e-36; Matches 74; Conservative 12; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Search completed: May 13, 2001, 17:48:33
Job time: 12136 sec
STRANDEDNESS: single
TOPOLOGY: linear
                                                        ; MOLECULE TYPE: peptide US-08-284-393B-14
```

q ò

δ

```
Compugen Ltd.
GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
```

OM protein - protein search, using sw model

Run on:

May 13, 2001, 21:48:39 ; Search time 64.5 Seconds (without alignments) 138.511 Million cell updates/sec

US-09-451-527-100 Title:

1 MALWLTVVIALTCLGGLASP......QLVKNLLTYVRGVYRHGNFR 130 Perfect score: Sequence:

**BLOSUM62** Scoring table:

Gapop 10.0 , Gapext 0.5

198801 seqs, 68722935 residues Searched:

198801 Total number of hits satisfying chosen parameters:

seq length: 0 seq length: 200000000 Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

pir1:\* pir2:\* pir3:\* pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

|           | Description | interleukin-13 pre | T-cell activation | interleukin-13 - r | TBP-interacting pr | conserved hypothet | hypothetical prote | sepiapterin reduct | seplapterin reduct | histone Hlt - pig | hypothetical prote | acrosin (EC 3.4.21 | platelet-derived e | ryanodine receptor | sepiapterin reduct | ATP-dependent RNA | hypothetical prote | •      | hypothetical prote | hypothetical prote | ಷ      | rapid lysis protei | aqualysin (EC 3.4. | acriflavin resista | Iq qamma chain C r | ryanodine receptor | ryanodine receptor | hypothetical prote |        | ubiquitin-specific |
|-----------|-------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|
| SUMMARIES | ID          | A47481             | E30552            | 152290             | T42735             | E83551             | T34264             | S52110             | A36024             | HSPG1T            | T23298             | S47538             | S03904             | A35041             | JQ1176             | S62423            | T51211             | 170195 | E72642             | T05882             | T00035 | Z2BPA4             | A35742             | E65022             | GHRB               | 146646             | B35041             | T21064             | T50355 | S50277             |
|           | 8           | 1                  | 7                 | 7                  | 7                  | 7                  | 7                  | 7                  | ~                  | Н                 | ~1                 | 7                  | ٦                  | -                  | ~                  | 7                 | 7                  | 7      | 7                  | 7                  | ~      | 7                  | П                  | ~                  | П                  | 1                  | ~                  | ~                  | 7      | 7                  |
|           | Length      | 146                | 131               | 131                | 1230               | 505                | 2195               | 261                | 262                | 211               | 1806               | 431                | 482                | 5032               | 261                | 481               | 586                | 208    | 264                | 1026               | 1811   | 725                | 513                | 1037               | 323                | 5035               | 5037               | 2761               | 425    | 802                |
| Query     | Match       | 80                 | 58.5              | 7.                 | 12.0               | 11.7               | 11.4               | 11.3               | 11.3               | 11.2              | 11.2               | 10.9               | 10.9               | 10.9               | 10.9               | 10.9              | 10.8               | 10.7   | 10.7               | 10.7               | 10.7   | 10.6               | 10.6               | 10.6               | 10.5               | 10.5               | 10.5               | 10.4               | 10.3   | 10.3               |
|           | score       | 448                | 382               | 378.5              | 79                 | 77                 | 75                 | 74.5               | 74.5               | 73.5              | 73.5               | 72                 | 72                 | 72                 | 71.5               | 71.5              | 71                 | 70.5   | 70.5               | 70.5               | 70.5   | 70                 | 69.5               |                    | 69                 | 69                 | 69                 | 68.5               | 68     | 89                 |
| Result    | . ON .      |                    | 0                 | m                  | 4                  | S                  | 9                  | 7                  | œ                  | σ                 | 10                 | 11                 | 12                 | 13                 | 14                 | 15                | 16                 | 17     | 18                 | 19                 | 20     | 21                 | 22                 | 23                 | 24                 | 25                 | 26                 | 27                 | 28     | 53                 |

| transcription acti | hypothetical prote<br>hypothetical prote | myosin-RhoGAP prot<br>conserved hypothet | immunodominant typ | DNA topoisomerase<br>flax rust resistan | dnaK-type molecula<br>hypothetical serin | GGDEF family prote | sugar ABC transpor | probable translati | phosphotyrosine ph | histone Hit - huma |
|--------------------|--|--|--------------------|---|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| S43738<br>T27254   | T33672<br>S46769                         | T31099<br>C82178                         | B42804             | A44978<br>T18546                        | I39585<br>T40137                         | A82444             | D75454             | T38694             | T41891             | JH0550             |
| 2 2                | 77                                       | 7 7                                      | 7                  | 7 7                                     | 7 7                                      | 7                  | 7                  | 7                  | ~                  | 7                  |
| 936<br>398         | 1008<br>1164                             | 2626<br>408                              | 522                | 1221<br>1294                            | 633<br>891                               | 412                | 521                | 1057               | 168                | 207                |
| 10.3               | 10.3                                     | 10.3                                     | 10.2               | 10.2                                    | 10.1                                     | 10.0               | 10.0               | 10.0               | 10.0               | 10.0               |
| 68<br>67.5         | 67.5                                     | 67.5<br>67                               | 67                 | 67                                      | 66.5                                     | 99                 | 99                 | 99                 | 65.5               | 65.5               |
| 30<br>31           | 32<br>33                                 | 34<br>35                                 | 36                 | 3.7<br>3.8                              | 39<br>40                                 | 41                 | 42                 | 43                 | 44                 | 45                 |

## ALIGNMENTS

```
C; Species: Homo sapiens (man)
C; Species: Homo sapiens (man)
C; C; Date: 21-Jan-1994 #sequence_revision 06-Dec-1996 #text_change 22-Jun-1999
C; Cacession: 138060; 138061; A47481
R; Minty, A.J.; Chalon, P.; Derocq, J.M.; Dumont, X.; Guillemot, J.C.; Kaghad, M.; Lab Nature 362, 248-250, 1993
A; Title: Interleukin-13 is a new human lymphokine regulating inflammatory and immune A; Reference number: 138060; MUID:93211479
A; Accession: 138060
A; Status: translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A.Molecule type: mRNA
A.Residues: 15-146 <RE2>
A.Cross-references: EMBLX69079; NID:9297787; PIDN:CAA48824.1; PID:9673420
B.McCrosz-references: EMBLX69079; NID:9297787; PIDN:CAA48824.1; PID:9673420
B.McCrosz-references: EMBLX69079; NID:93297787; PIDN:CAA48824.1; PID:9673420
B.McCrosz-reference, J.A.; de Waal Malefyt, R.; Briere, F.; Punnonen, J.; Ave Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739, 1993
A.Title: Interleukin 13, a T-cell-derived cytokine that regulates human monocyte and A:Reference number: A47481; MUID:93234572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C.Keywords: alternative initiators; cytokine; glycoprotein . C.Keywords: alternative initiators; cytokine; glycoprotein . E:1-146/Product: interleukin-13 precursor, long splice form #status predicted csIGS . E:15-146/Product: interleukin-13 precursor, short splice form #status predicted <PRS> F:25-146/Product: interleukin-13 #status predicted <MAT> F:25-146/Product: interleukin-13 #status predicted <MAT> F:52,63,71,86/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A/Residues: 1.146 <RES>
A/Residues: 1.146 <RES>
A/Cross-references: EMBL:X69079; NID:g297787; PIDN:CAA48823.1; PID:g580330
A/Accession: 138061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Residues: 15-146 <MCK>
A;Cross-references: GB:L06801; NID:g186275; PIDN:AAA36107.1; PID:g186276
A;Cross-references: Gn A-activated CD8+ T-cell clone, Al0
A;Note: sequence extracted from NCBI backbone (NCBIP:129773)
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary; not compared with conceptual translation A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Gene: GDB:LL13; P600; NC30
A,Cross-references: GDB:138171; OMIM:147683
A,Map position: 5q31-5q31
C;Superfamily: interleukin-13
                                                                                                                                      Contains: interleukin 13, short form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: translated from GB/EMBL/DDBJ
                                                                                                interleukin-13 precursor - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: A47481
RESULT
A47481
```

1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59

ŏ

3

Gaps

;

Indels

25;

68.1%; Score 448; DB 1; 71.0%; Pred. No. 1.3e-37; tive 11; Mismatches 25

Query Match
Best Local Similarity 71.08
Matches 93; Conservative

Length 146;

N

. H

```
A; Description: considered to participate in transcription regulation through the Inte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic pa
A;Reference number: A82950; MUID:20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GB:AE004510; GB:AE004091; NID:99946634; PIDN:AAG04141.1; GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tamura,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:D87671; NID:g1799569; PIDN:BAA13432.1; PID:g1799570
                                                                                                                                                                                                                                                                                                                                                                         C;Species: Rattus norvegicus (Norway rat)
C;Accession: T42735
R;Yogosawa, S.; Makino, Y.; Yoshida, T.; Kishimoto, T.; Muramatsu, M.; Tamur Biochem. Biophys. Res. Commun. 229, 612-617, 1996
A;Title: Molecular cloning of a novel 120-kDa TBP-interacting protein.
A;Reference number: 222253; MUID:97127450
                                                              NLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKN 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV-----WSV 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 79; DB 2;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.0%; Scur.
31.2%; Pred. No. 11,
... 19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111.7%; Score 77; DB 24.8%; Pred. No. 6.1; ive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                    TBP-interacting protein TIP120 - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 31.28
Matches 39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 24.8
Matches 34; Conservative
                                                                                                                                              116 LLTYVRGVYRHGN 128
                                                                                                                                                                                    119 LLNYSKQLFRYGH 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <Y0G>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-505 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-1230 <Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: E83551
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 VKNLL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          742 VRSPL 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: tip120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Function:
                                   26
                                                                               g
                                                                                                                                              ò
                                                                                                                                                                                                q
                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                        RESULT 2
E30552
T-cell activation protein P600 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
R;Brown, K.D.; Zurawski, S.M.; Mosmann, T.R.; Zurawski, G.
J. Immunol. 142, 679-687, 1989
A;Title: A family of small inducible proteins secreted by leukocytes are members of a new sylvations activation processes.
A;Reference number: A30552; MuID:89093958
A;Accession: E30552
A;Molecule Lype: mRNA
A;Residues: 1-131 < ABNO
A;Cross-references: GB:M23504; NID:9533246; PIDN:AAA40149.1; PID:9533247
C;Superfamily: interleukin-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: Cispecies: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           п
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                     GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                  57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MALWLTVVIALTCLGGLASPSPV----TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58.5%; Score 385; DB 2; Le 58'.6%; Pred. No. 2.3e-31; ive 19; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.5%; Score 378.5; DB 2;
59.4%; Pred. No. 1e-30;
ive 21; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 58'6%
Matches 78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 59.49
Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117 LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |:| : ::||| |
LSYTKQLFRHGPF 131
                                                                                                                                                                                                            135 HLKKLFREGRF 145
                                                                                                                                                                     119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
QQ
                                                                                                    Db
                                                                                                                                                                                                            qq
                                                     ð
                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

us-09-451-527-100.rpr

9

```
A Residues: 4-262 <CITY
A Residues: 4-262 <CITY
A Residues: 4-262 <CITY
A Residues: 4-262 <CITY
A Residues: 4-262 <CITY
A Residues: 4-262 <CITY
A Reference GB: Mac640; II: Suzuki, M.; Ichinose, H.; Nagatsu, T.; Titani, K. Biochem. Biophys. Res. Commun. 173, 627-631, 1990
A Filte: The complete amino acid sequence of the mature form of rat sepiapterin reduce A Reference number: A36400; MUID: 91083647
A; Molecule type: protein
A; Residues: 1-32; A441-92, I', 96-124;126-262 <CYA>
B; Residues: 1-32; A441-92, I', 96-124;126-262 <CYA>
B; Residues: 1-32; A441-92, I', 86-124;126-262 <CYA>
B; Reference number: A9174; MUID: 93178546
B; Reference number: A99174; MUID: 93178546
B; Reference number: A99174; MUID: 93178546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Description: catalyzes the NADPH-dependent reduction of sepiapterin to produce 7,8-C;Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology C;Keywords: acetylated amino end; homodimer; oxidoreductase
F;9-200/Domain: short-chain alcohol dehydrogenase homology <SADH>
F;1/Modified site: acetylated amino end (Met) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Accession: A36024, A36400; PHIS77; I64799; A4917,
C;Accession: A36024, A36400; PHIS77; I64799; A4917,
Proc. Natl. Acad. Sci. U.S.A. 87, 6436-6440, 1990
A;Title: Isolation and expression of rat liver sepiapterin reductase cDNA.
A;Reference number: A36024; MUID:90349631
                                                                                                                                                                                                                                           46 LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG----ISSER 101
                                                                                                                                                                                                                                                                                                                                                          LAEVNNYWALNLTS-MLCLTSGTLNAFQDSPGLSKTVVNISSLCALQPYKGWGLYCAGKA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOVVLAAADLGTESGVQQLLSAVRELPRPERLQRLLLINNAGTLGDVSKGFLNIN----D 117
                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                     5 LTVVIALTCLGGLAS------PSP-----VTPSPTLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----TLKELIEELVNITQNQAS 45
                                                                                                                                            31;
F;9-200/Domain: short-chain alcohol dehydrogenase homology <SADH>
                                                                                      Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 262;
                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                            54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.3%; Score 74.5; DB 2; 23.6%; Pred. No. 5.2; 1ive 26; Mismatches 53;
                                                                                         5;
                                                                                   ; Score 74.5; Di
; Pred. No. 5.2;
27; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 LTVVIALTCLG-----GLASPSPVTPSP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sepiapterin reductase (EC 1.1.1.153) - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                          SRDTKIEVIQLVK --- NLLTYVRG 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             177 ARDMLYQVLAAEEPSVRVLSYAPG 200
                                                                                   Query Match
Best Local Similarity 22.2%;
Matches 32; Conservative 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Op
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein F46C8.4 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
C;Accession: T34264
R;Wilcox, L.
submitted to the EMBL Data Library, November 1995
A;Description: The sequence of C. elegans cosmid F46C8.
A;Reference number: 221497
A;Reference number: 221497
A;Reference number: 21497
A;Residues: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-2195 <WILL>
A;Coss-references: EMBL:U41624; PIDN:AAA83316.1; CESP:F46C8.4
C;Genetics: 1-2195 <WILL>
A;Gene: CESP:F46C8.4
A;Introns: 19/3; 61/3; 80/1; 189/1; 182/1; 2011/2; 2068/3; 2117/1; 2161/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sepiapterin reductase (EC 1.1.1.153) - mouse C; Species: Mus musculus (house mouse) C; Species: Mus musculus (house mouse) C; Species: Mus musculus (house mouse) C; Species: Mul-1995 #sequence_revision 21-Jul-1995 #text_change 18-Feb-2000 C; Accession: S22110; #H1578 R; Ota, A.; Ichinose, H.; Nagatsu, T. Bacchim. Biophys. Acta 1260, 320-322, 1995 A; Title: Mouse sepiapterin reductase: an enzyme involved in the final step of tetrahydra A; Reference number: S52110; MUID:95178553 A; Accession: S52110 A; Reference number: S52110; MUID:95178553 A; Mulcoule type: mRNA A; Molecule type: mVID:93178546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 209-255 <MAI>
C;Comment: This enzyme catalyzes the reduction of both C1' and C2' oxo group.
C;Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology
C;Keywords: oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FVLMVFAIVCLGGMAGDRP-----LKTLLAALLGLFLSSVGIDANSGVYRFTGDSIHLA 203
                                                                                                                                            ----SAIQRTQRMLKALCSQKPAAGISSERSRDTK 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 LTVVIALTCLGGLASPSP-VTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYC 63
                          WLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVW----SVNLT
                                                                                                                                                                                               204 DGIQFVVLVLGLFSVSEILLLLEKTHHGQEAVKATGRM---LFNFKEAASVL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2; Length 2195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---RMLKALCSQKPAAGIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Pred. No. 52;
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.4%; Score 75; 25.9%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 AALESLINVSD--CSAIQRTQ-----
                                                                                                                                      59 AGM-YCAALESLINVSDC----
                                                                                                                                                                                                                                                          107 IEVIQLVKNLĽTYVRGV 123
                                                                                                                                                                                                                                                                                                                -- LVNLRCGLLGFVMGV 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L Similarity
28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: PH1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
Matches 2
                          4
                                                                                150
                                                                                                                                                                                                                                                                                                                253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1222
                          ð
                                                                             d
                                                                                                                                      δ
                                                                                                                                                                                            q
                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

s.

. ف

```
A;Accession: JX0275
A;Molecule type: mRNA
A;Residues: 125-244 <SUM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: protein
A;Residues: 6-14 <USU>
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: S47538
A; Molecule type: mRNA
A; Residues: 1-431 <RIC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: S03904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: A60966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: GDB: ECGF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67 ES 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
g
                                                                        ò
                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA binding; nucleosome; spermatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Map position: 2
A:Introns: 24/2; 77/3; 294/2; 378/3; 433/3; 478/3; 523/3; 743/1; 794/3; 1049/3; 1414/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Comment: This histone is a testis-specific H1 variant that appears during meiosis in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cispecies: Sus scrofa domestica (domestic pig)
Cibate: 30-Unn-1997 #sequence_revision 30-Unn-1997 #text_change 16-Feb-1997
Cibate: 30-Unn-1997 #sequence_revision 30-Unn-1987 #text_change 16-Feb-1997
Cibate: 30-Unn-1997 #sequence of host
I Ricole, K.D.; York, R.G.; Kistler, W.S.
J. Biol. Chem. 259, 13565-13702, 1984
A.Fitle: The amino acid sequence of boar Hlt, a testis-specific Hl histone variant.
A.Feference number: A02581; MUID:85054795
A.Focession: A02581
A.Focession: A02581
A.Focession: A02581
A.Focession: A02581
A.Focession: A02581
A.Focession: A02581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ς.
Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Experimental source: clone K04B12.CAB05755.1; GSPDB:GN00020; CESP:K04B12.1 C:Genetion:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
T12398
T12398
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis 
                                                                               LAEVNNYWALNLTS-MLCLTTGTLNAFSNSPGLSKTVVNISSLCALQPFKGWGLYCAGKA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575 ANWTTT------GVSCPSEIFTSPNTFEIL-LLTSISNNPISRHNFTVYDCSGYGTCS 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VNLTAGMYCAALESLINVSD-CSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLV 113
                                  LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG----ISSER 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16 GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASL-----CNGSMVWS 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SAIQRIQRMLKALCSQKPAAGISSERSRD-TKIEVIQLV-KNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C.Superfamily: histone H1 C.Keywords: acetylated amino end; chromosomal protein; DNA binding E:1/Nodified site: acetylated amino end (Ala) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1806;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-1806 <WIL-
A;Residues: 1-1806 <WIL-
A;Cross-references: EMBL:28323; PIDN:CAB05755.1; G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11.2%; Score 73.5; D
25.7%; Pred. No. 59;
Live 24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ::
--
--
                                                                                                                                                                                  SRDTKIEVIQLVK --- NLLTYVRG 122
                                                                                                                                                                                                                                                   177 ARDMLYQVLAVEEPSVRVLSYAPG 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 26.55
Matches 31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: Z19723
A; Accession: T23298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: CESP: K04B12.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S:
Matches 35,
                                                                                                                                                                                                                                                                                                                                                                                                    HSPG1T
histone Hit -
                                                                                                      118
                                                                                                                                                                                  102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92
                                  46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55
                                                                                                  qq
                                                                                                                                                                               ò
                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
R;Sumizawa, T.; Furukawa, T.; Haraguchi, M.; Yoshimura, A.; Takeyasu, A.; Ishizawa, M.) Blocchen. 114, 9-14, 1993
A; Biocchen. 114, 9-14, 1993
A; Title: Thymidine phosphorylase activity associated with platelet-derived endothelia
A; Reference number: JX0275; MUID: 94012588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 11-482 <1819-
A; Note: part of this sequence, including the amino end of the mature protein, was con
A; Note: 471-Ser was also found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                preproa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 platelet-derived endothelial cell growth factor precursor [validated] - human N; Conteains: thymidine phosphorylase (EC 2.4.2.4) (C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Date: 23-Oct-1998 #sequence_revision 23-Oct-1998 #text_change 08-Dec-2000 C;Accession: 803904; X0275; A60966 R;Ishikawa F:: Miyazono, K:; Hellman, U:; Drexler, H:; Wernstedt, C:; Hagiwara, K:; Nature 338, 557-562, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A:Title: Identification of anglogenic activity and the cloning and expression of A:Reference number: S03904; MUID:89181955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Larsson, E.; Miyazono, K.; Hellman, U.; Wernstedt, C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a novel
                                                                                                                                                                                                                                                                                                                                 Grosin (EC 3.4.21.10) precursor - rabbit
C;Species: Oryctclagus cuniculus (domestic rabbit)
C;Date: 26-Dec-1994 #sequence_revision 10-Nov-1995 #text_change 22-Jun-1999
C;Accession: S47538
R;Richardson, R.T.; O'Rand, M.G.
Biochim. Blophys. Acta 1219, 215-218, 1994
A;Fitle: Cloning and sequencing of CDNAs for rabbit preproacrosin and a nove
A;Reference number: S47538; MUID:94368861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endothelial cell growth factor in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIDN:AAA61630.1; PID:g451842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 ALTCL---GGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAAL 66
626 SCMSSEYNCAWCSGLHKCSNSCGALEKSKACVKIQPMRLPIA-IGSQQ-----EIVLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.9%; Score 72; DB 2; Length 431; 32.3%; Pred. No. 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references: EMBL: U05204; NID: 9451841; PIDN: AAA(C; Superfamily: acrosin; trypsin homology C; Keywords: glycoprotein; hydrolase; serine proteinase F; 40-283/Domain: trypsin homology <TRY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Experimental source: placenta
R; Usuki, K.; Norberg, L.; Larsson, E.; Miy
Cell Regul. 1, 577-596, 1990
A; Title: Localization of platelet-derived
A; Reference number: A60966; MUID: 91175877
                                                                          114 KNLLTYVRGVYRHGNF 129
                                                                                                                                 679 SNLDTLDR---RHEHF 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 32.3
Matches 20; Conservative
```

```
77 AIQ----
                                                                                                                                                                                                                        121 RGV 123
                                                                                                                                                                                                                                                                                                                                       641 TSI 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: GDB: SPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S62423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp.
                                                                                                               g
                                                                                                                                                                                                             ο
                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adviding receptor type 1, skeletal muscle - human
NiAternate names: calcium release channel protein
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
C; Species: Homo saptens (man)
J; Spiding Spiding Spiding Spiding Homan and rabbit forms of the Ca(2+) release
A; Reference number: A35041; MUID: 90130482
A; Title: Molecular (long)
A; Status; Perlillingary; not compared with conceptual translation
A; Molecule type: mRAN
A; Molecule type: mRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Spidingary; Na. S; Khanna, V.K.; de Leon, S.; MacLennan, D.H.
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule type: MRAN
A; Molecule
                                      A Map position: 22q13-22q13
C;Superfamily: thymidine phosphorylase
C;Superfamily: thymidine phosphorylase
C;Keywords: angiogenesis; glycosyltransferase; growth factor; mitogen; pentosyltransfera
C;Keywords: angiogenesis; glycosyltransferase;
F;6-482/Product: platelet-derived endothelial cell growth factor, platelet form #status
F;11-482/Product: platelet-derived endothelial cell growth factor, platelet form #status
F;63/Binding site: carbobydrate (Asn) (covalent) #status absent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               285 LEVEEALLCMDG-AGP-----PDLRDLVTTL------GGALLWLSGHAGTQAQG 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ||: |: :: :| :: || |: :: || |: |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: || |: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKELIEELVNITQNQASLCNGSMVWSVN-----LTAGMYCAALES--LINVSDCS 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 5032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1; Length 482;
18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 10.9%; Score 72; DB 1; Length 503 Local Similarity 21.1%; Pred. No. 2.7e+02; Locs 26; Conservative 26; Mismatches 43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AARVAAALDDGSALGRFERMLAAQGVDPGLARALCSGSPA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALESLINVSDCSAIQRTQRML------KALCSQKPA 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 10.9%; Score 72; DB 1
Best Local Similarity 28.0%; Pred. No. 18;
Matches 28; Conservative 11; Mismatches
GDB:127754; OMIM:131222
A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S:
Matches 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
```

```
C; Species: Homo sapiens (man)
C; Decise: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C; Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C; Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C; Accession: Jol176; Pul579; J83-189, 1991
A; Tittani, K.; Fujita, K.; Nagatsu, T.
Biochem. Biophys. Res. Commun. 179, 183-189, 1991
A; Tittani, C.; Nagatsu, T.
A; Tittani, K.; Fujita, K.; Nagatsu, T.
Biochem. Biophys. Res. Commun. 179, 183-189, 1991
A; Texterence number: Jol176; MUID:91354248
A; Reference number: Jol176
A; Molecule type: mRNA
A; Residues: 1-261 < ICH>
A; Cross-references: GB:M76231; NID:9338020; PIDN:AAA60314.1; PID:9338021
A; Experimental source: liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Maler, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Exp. Cell Res. 204, 217-222, 1993
A;Title: Detection of a novel seplapterin reductase mRNA: Assay of mRNA in various ce
A;Reference number: A49174; MUID:93178546
A;Accession: PH1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A Molecule type: mRNA
A) Residues: 208-254 <MAI>
A) Residues: 208-254 <MAI>
B) Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Adv. Exp. Med. Biol. 338, 195-198, 1993
A) Title: Northern blot analysis of sepiapterin reductase mRNA in mammalian cell lines
A) Recession: I51849; MUID: 94136218
A) Status: translated from GB/EMBL/DDBJ
A) Mindecule type: mRNA
A) Mindecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:S71376; NID:9557903; PIDN:AAD14079.1; PID:94261779
C;Comment: This enzyme catalyzes the NADPH-dependent reduction of sepiapterin to prod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dehydrogenase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP-dependent RNA helicase - fission yeast (Schizosaccharomyces pombe) C;Species: Schizosaccharomyces pombe C;Species: Schizosaccharomyces pombe C;Date: 16-May-1996 #sequence_revision 13-Mar-1997 #text_change 17-Nov-2000 C;Accession: T38183; S62423 R;Lye, G;, Churcher, C.M.; Barrell, B.G.; Rajandream, M.A.; Walsh, S.V. submitted to the EMBL Data Library, October 1995 A;Reference number: 221776
                                                     ----RTQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36 LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;8-199/Domain: short-chain alcohol dehydrogenase homology <SADH>F;28-32/Region: pterin binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Map position: 2p14-2p12
C;Superfamily: ribitol dehydrogenase; short-chain alcohol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.9%; Score 71.5; Clarity 24.7%; Pred. No. 10; Conservative 21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163 PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG
                                                                                                                                                                                                                                                                                                                                                                                                                                         sepiapterin reductase (EC 1.1.1.153) - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Keywords: NADP; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: GDB:128778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208-254 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity
Matches 24; Conserv
```

```
us-09-451-527-100.rpr
```

```
A;Accession: T38183
A;Status: preliminary: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-481 <L/2>
A;Cross-references: EMBL:254285; PIDN:CAA91073.1; PID:g1008436; GSPDB:GN00066; SPDB:SPAC
A;Cross-references: strain 972h-; cosmid c22F3
C;Genetics:
A;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25 PSPTLKEL-IEELVNITQNQASLCNGSMVWSV-NLTAGMYCAALESLINVSDCSAIQRTQ 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18 PQPSIKEKERARKIQGITKGKAKVTGNNPVDPIEEFPEGILCENLKKQ-NITECTTIQR-- 74
                                                                                                                                                                                                                                                                                                                                                                                                                             ς.
..
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 24.3%; Pred. No. 21;
Matches 25; Conservative 25; Mismatches 48; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83 RMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYR 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,Map position: 1L
C;Keywords: ATP; P-loop
F;90-97/Region: nucleotide-binding motif A (P-loop)
F;192-197/Region: nucleotide-binding motif B
F;196-199/Region: DEAD motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

Search completed: May 13, 2001, 21:48:44 Job time: 26253 sec

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

May 14, 2001, 06:02:05; Search time 44.64 Seconds (without alignments) 99.758 Million cell updates/sec Run on:

US-09-451-527-100
658
1 MALWITVVIALTCLGGLASP......QLVKNLLTYVRGVYRHGNFR 130 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

93435 seqs, 34255486 residues Searched:

93435

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_39:\* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

|           | Description   | P35225 homo sapien | Q9xsv9 bos taurus | P20109 mus musculu | P42203 rattus norv | Q64105 mus musculu | P18297 rattus norv | P06348 sus scrofa | P48038 oryctolagus |            | P21817 homo sapien | homo       | -          |           |           |            | P08594 thermus agu | -          | P01870 oryctolagus |          | _          | P39944 saccharomyc | P39521 saccharomyc | P38853 saccharomyc | P37919 rickettsia |            |            |            | P22492 homo sapien | P48831 canis famil |            |            | y613       | P14046 rattus norv |
|-----------|---------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|------------|--------------------|------------|------------|-----------|-----------|------------|--------------------|------------|--------------------|----------|------------|--------------------|--------------------|--------------------|-------------------|------------|------------|------------|--------------------|--------------------|------------|------------|------------|--------------------|
| SUMMAKIES | ŢĎ            | IL13_HUMAN         | IL13_BOVIN        | IL13_MOUSE         | IL13_RAT           | SPRE_MOUSE         | SPRE_RAT           | H1T_PIG           | ACRO_RABIT         | TYPH_HUMAN | RYNR_HUMAN         | SPRE_HUMAN | YA88_SCHPO | H1T_MACMU | VR2A_BPT4 | FLHC_SALTY | AQL1_THEAQ         | ACRD_ECOLI | GC_RABIT           | RYNR_PIG | RYNR_RABIT | UBP5_YEAST         | FHL1_YEAST         | KEL1_YEAST         | TSAW_RICTS        | TOP2_TRYBB | DNAK_AGRTU | YB33_SCHPO | H1T_HUMAN          | ZP3_CANFA          | MUTL_THEMA | DNAK_RHILE | FHOS_HUMAN | Ali3_RAT           |
|           | Length DB     | 132 1              |                   |                    |                    | 261 1              |                    |                   |                    |            |                    |            |            |           |           |            |                    |            |                    | 5035 1   | 5037 1     |                    |                    |                    |                   |            |            |            |                    |                    |            | 638 1      | 1164 1     | 1477 1             |
| ж         | ery           | 68.1               | 62.6              |                    | 57.5               | 11.3               | 11.3               | 11.2              | 10.9               | 10.9       | 10.9               | 10.9       | 10.9       | 10.7      | 10.6      | 10.6       | 10.6               | 10.6       | 10.5               | 10.5     | 10.5       | 10.3               | 10.3               | 10.3               | 10.2              | 10.2       | 10.1       | 10.1       | 10.0               | 10.0               | 0          | 10.0       | 10.0       | ο<br>ο.            |
|           | Score         | 448                | 412               | 385                | 378.5              | 74.5               | 74.5               | 73.5              | 72                 | 72         | 72                 | 71.5       | 71.5       | 70.5      | 70        | 69.5       | 69.5               | 69.5       | 69                 | 69       | 69         | 68                 | 68                 | 67.5               | 29                | 67         | 66.5       | 66.5       | 65.5               | 65.5               | 65.5       | 65.5       | 65.5       | o<br>C             |
|           | Result<br>No. | -                  | 7                 | m                  | 4                  |                    | Q                  | 7                 | œ                  | on.        | 10                 | 11         | 12         | 13        | 14        | 15         | 16                 | 17         | 18                 | 19       | 20         | 21                 | 22                 | 23                 | 24                | 25         | 26         | 27         | 28                 | 29                 | 30         | 31         | 32         | χ.<br>Σ            |

| P24656 autographa P15473 rattus norv P44324 haemophilus P42700 xenopus lae P25980 xenopus lae Q12751 saccharomyc P06758 zymomonas m Q60738 mus musculu P46012 caenorhabdi P54211 dunaliella P42609 escherichia P34528 caenorhabdi           |  |
|---|--|
| PTP_NPVAC<br>IBP3_RAT<br>ASPA_HAEIN<br>RO60 XENLA<br>UBF2_XENLA<br>VM48_YEAST<br>ADH2_ZYMMO<br>ZNTL_MOUSE<br>YKT5_CABEL<br>PMA1_DNDBI<br>EXUT_ECOLI   |  |
|   |  |
| 168<br>292<br>475<br>475<br>538<br>701<br>981<br>382<br>953<br>1131<br>472<br>585   |  |
| $\begin{array}{c} \omega$ |  |
| 00<br>4440<br>44440<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60   |  |
| 33<br>33<br>33<br>33<br>34<br>34<br>34<br>34<br>34<br>34<br>34<br>34  |  |

## ALIGNMENTS

| P35225 043644; 01-FEB-1994 (Rel. 28, Created) 01-OCT-2000 (Rel. 28, Last seq 01-OCT-2000 (Rel. 28, Last seq 01-OCT-2000 (Rel. 28, Last seq 01-OCT-2000 (Rel. 40, Last ann INTERLEUKIN-13 PRECURSOR (IL-1 IL13 OR NG30. Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Mammalla; Eutheria; Primates; NCBI_TAXID=9606; 15 EQUENCE FROM N.A. MEDLINE-93211479; PubMed=80963 Minty A.J.; Chalon P., Derocq Kaghad M., Labit C., Lageper J.A. MITTY A.J.; Chalon P., Derocq Kaghad M., Labit C., Loison Caput D.; Interleukin-13 is a new human immune responses."; Nature 362:248-250(1993). [2] SEQUENCE FROM N.A. MEDLINE-952472; PubMed=80973 MCKenzie A.N., Culpepper J.A., Punnonen J., Aversa G., Sato A de Vries J.E., Banchereau J., Interleukin 13, a T-Call-deri monocyte and B-cell function." Proc. Natl. Acad. Sci. U.S.A. [3] SEQUENCE FROM N.A. SEQUENCE FROM N.A. [4] SEQUENCE FROM N.A. SEQUENCE FROM N.A. SEQUENCE FROM N.A. SEQUENCE FROM N.A. TISSUE-Blood; MEDLINE-95237624; PubMed=77211 Smirnov D.V., Smirnova M.G., K Tandem arrangement of human ginterleukin-13: resemblance in Gene 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; SUBMITTEG (JAN-1998) to the EM [6] 3D-STRUCTURE MODELING. MEDLINE-95132893; PubMed=75303 MEDLINE-95132893; PubMed=75303 MEDLINE-95132893; PubMed=75303 MEDLINE-95132893; PubMed=75303   | uence update) otation update) 3). Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo. |
|--|--|
| 11. FEB-1994 (NEC) 11. TOT -2000 (RE) 10. TOT -2000 (RE) 10. TOR NG30. HOMO Sapiens (HE BUKATYOTA) META MAMMARATYOTA META MADILINE-9321147 MINTY A.J., Cha MEDLINE-9321147 MINTY C., Casel Caput D.; Interlenkin-13 Immune response Nature 362:248-[2] SEQUENCE FROM N MEDLINE-923457 MCKENZIG A.N., FA INTERLENTIN-13 TOTO ON TOTO SEQUENCE FROM N MEDLINE-923762 MCGUTN M., Gibs SEQUENCE FROM N SEQUENCE FROM N MEDLINE-953762 SMITNOV D.V., S MEDLINE-953762 SMITNOV D.V., S TISSUE-BLOOG; MEDLINE-953762 SMITNOV D.V., S TISSUE-BLOOG; MEDLINE-953762 SMITNOV D.V., S TISSUE-BLOOG; MEDLINE-953762 SMITNOV D.V., S TISSUE-BLOOG; MEDLINE-953762 SMITNOV D.V., S TISSUE-BLOOG; MEDLINE-953762 SMITNOV D.V., S TOTO SEQUENCE FROM N JANG J.S., Kim Submitted (JNL- [6] MEDLINE-9513258 MEDLINE-9513258 MEDLINE-9513258 MEDLINE-9513258 MEDLINE-9513258  | ate)<br>srtebrata; Euteleostomi;<br>Hominidae; Homo.   |
| 01-0CT-2000 (Re INTERLEUKIN-13 ILL3 OR NC30. Homo sapiens (H Bukaryota; meta Mammalia; Buthen NCBI_TaxID=9606 [1] Excluence From N MEDLINE-9321147 Minty C., Casel Caput D.; Casel Caput D.; Interleukin-13 immune response Nature 362:248-[2] Immune response Nature 362:248-[2] Immune response Nature 362:248-[2] Immune response Nature 362:248-[2] Immune response Nature 362:248-[2] SEQUENCE FROM N MEDLINE-93457 MCKenzie J., Av de Vincenzie J., Av d   | ate)<br>srtebrata; Euteleostomi;<br>Hominidae; Homo.   |
| ILIJ3 OR NC30.  HOMO SAPIENS (HEUKARTONE)  EUNATYONE SPECIALY  MEDLINE-9321147  MINTY A.J. Cha  MEDLINE-9321147  MINTY C. Casel  Caput D. Casel  Caput D. Thereithin-13  Inmune response  Nature 362:248-  [2]  ENGUENCE FROM N  MEDLINE-9323457  MCKENZIE A.J. AV  DUNDONEN J. AV  DUNDONEN J. AV  DUNDONEN J. AV  ENTERIENTINE J. AV  BEDLINE-9533762  SEQUENCE FROM N  SEQUENCE FROM N  SEQUENCE FROM N  GIDS  SEQUENCE FROM N  TISSUE-BLOOG;  MEDLINE-9523762  SMITNOV D.V. S  "Tandem AITANE  Interleukin-13:  Gene 155:277-28  [6]  SEQUENCE FROM N  JANG J. S., KIM  SEQUENCE FROM N  JANG J. S., KIM  SEQUENCE FROM N  JANG J. S., KIM  SEDINE-9513258  BEMBDLINE-9513258  BEMBDLINE-9513258  BEMBDLINE-9513258  | ertebrata; Euteleostomi;<br>Hominidae; Homo.   |
| Homo sapiens (Heuvaryota) Meta<br>Mammalia, Euthen<br>NCBI_TaxID=9606<br>[1]<br>SEQUENCE FROM N<br>MEDLINE=9321147<br>Minty C., Casel<br>Caput D.; Labi<br>Minty C., Casel<br>Caput D.;<br>Interlenkin-13<br>immune response<br>Nature 362:248-<br>[2]<br>SEQUENCE FROM N<br>MEDLINE=923457<br>MCKENZIE A.N., Av<br>de Vries J.E.,<br>Interlenkin-13<br>SEQUENCE FROM N<br>MEDLINE=923457<br>MCKENZIE A.N., Av<br>de Vries J.E.,<br>Interlenkin-13<br>SEQUENCE FROM N<br>Dolganov G., Le<br>MCGurn M., Gibs<br>SEQUENCE FROM N<br>SEQUENCE FROM N<br>SEQUENCE FROM N<br>SEQUENCE FROM N<br>TISSUE=BLOOG;<br>MEDLINE-9523762<br>SMITNOV D.V., S<br>MITATORE SEROM<br>TISSUE=BLOOG;<br>MEDLINE-9523762<br>SMITNOV D.V., S<br>MEDLINE-9523762<br>SMITNOV D.V., S<br>MITNOV D.V., S  | srtebrata; Euteleostomi;<br>Hominidae; Homo.   |
| BUKATYOTA; MACTA MAMMANING BULKATYOTA; MACTA NCBI_TAXID=9606  SEQUENCE FROM N MEDLINE=9321147  MINTY A.J., Cha Kaphad M. Liabil MINTY C., Casel Caput D.;  Interlenkin-13 immune response Nature 362:248-[2]  SEQUENCE FROM N MEDLINE=923457  MCKENINE=9323457  MCKENINE=9323457  MCKENINE=9323457  MCKENINE=9323457  MCKENINE=9233457  MCGUTN M., GIDS SEQUENCE FROM N N GIDS SEQUENCE FROM N N GIDS SEQUENCE FROM N TISSUE=BLOOG; MEDLINE=953762  SEQUENCE FROM N TISSUE=BLOOG; MEDLINE=953762  SEQUENCE FROM N TISSUE=BLOOG; MEDLINE=953762  SEQUENCE FROM N TISSUE=BLOOG; MEDLINE=953762  SEQUENCE FROM N SANGINE SEQUENCE FROM N TISSUE=BLOOG; MEDLINE=953762  SEQUENCE FROM N JANGINE SEQUENCE FROM N JANGINES SEQUENCE FROM N JANGINES SEQUENCE FROM N JANGINES MEDLINE=9513258  BEMDDOTOUGH P.,  | rrebrata; Euteleostomi;<br>Hominidae; Homo.  |
| NCBLITAID 9606 SEQUENCE FROM WHITY A.J. Cha Kaghad M. Labi MINTY C. Casel Labi MINTY C. Casel Labi MINTY C. Casel Labi MINTY C. Casel Linterleukin-13 immune response Mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:248-[2] mature 362:23762 mature 362:23762 mature 362:23762 mature 362:23762 mature 362:23762 mature 362:277-28 mature 362:23762  | הסוונדוובמפל, חסוונס.  |
| [1] SEQUENCE FROM N MEDLINE=9321147 Minty A.J., Cha Minty A.J., Cha Minty C., Casel Caput D.; Interleukin-13 immune response Nature 362:248 [2] SEQUENCE FROM N MEDLINE=9323457 MCKenzie A.N., Punnonen J., Av de Vries A.N., Punnonen J.E., Interleukin 13 monocyte and B- Proc. Natl. Aca [3] SEQUENCE FROM N Olganov G., Le MCGurn M., Gibss Submitted (JUL- (4] SEQUENCE FROM N TISSUE=Blood; MEDLINE=9523762 SEQUENCE FROM N TISSUE=Blood; MEDLINE=952376 SEQUENCE FROM N TISSUE=Blood; MEDLINE=952376 SEQUENCE FROM N Jang J.S., Kim SEQUENCE FROM N Jang J.S., Kim SEQUENCE FROM N Jang J.S., Kim SEQUENCE FROM N Jang J.S., Kim SUBmitted (JAN- 66] BENDLINE=9513258 BENDLINE=9513258 BENDLINE=9513258 BENDLINE=951328   |  |
| SEQUENCE FROM MEDLINE-9321147 Minty A.J., Labil Minty A.J., Casel Caput D.; Interleukin-13 immune response Nature 362:248- [2] SEQUENCE FROM N MEDLINE-923457 MCRENZIE A.N., Av de Vries J.E., MCRENZIE A.N., Av de Vries J.E., MCRENZIE A.N., Av de Vries J.E., MCRENZIE A.N., Av de Vries J.E., MCRENZIE A.N., Av de Vries J.E., MCGULNE G. LE MCGULNE J.E., Interleukin J.E., SEQUENCE FROM N DOIGHOOV G., Le MCGULN M., Gibs, SEQUENCE FROM N TISSUE-BLOOG; MEDLINE-9523762 Smirnov D.V., S TANDEM AIRMORE SEQUENCE FROM N TISSUE-BLOOG; MEDLINE-9523762 Smirnov D.V., S FORMAN SEQUENCE FROM N Jang J.S., Kim Submitted (JUL- 661 67 SEQUENCE FROM N Jang J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim   |  |
| MEDLINE-9321147 Minty A.J. Cha Kaghad M.J. Labil Minty C., Casel Caput D.; Labil Interleukin-13 immune response Nature 362:248- [2] SEQUENCE FROM N MEDLINE-932457 MCKenzie A.N., Punnonen J., Av de Vissa J.E., Interleukin 13 monocyte and B- proc. Natl. Aca [3] SEQUENCE FROM N Dolganov G., Le MCGurn M., Gibs SEQUENCE FROM N TISSUE-BLOOG; MEDLINE-9523762 Smirnov D.V., S "Tandem arrange interleukin-13: Gene 155:277-28 [5] SEQUENCE FROM N Jang J.S., Kim Submitted (JNL- SEQUENCE FROM N TISSUE-BLOOG; MEDLINE-9523762 Smirnov D.V., S "Tandem arrange interleukin-13: Gene 155:277-28 [6] SEQUENCE FROM N Jang J.S., Kim Submitted (JNN- 3D-STRUCTURE MO MEDLINE-9513258  |  |
| Raphad M. J. Jahi<br>Minty C., Casel<br>Caput D.;<br>Interlenkin-13<br>immune response<br>Nature 362:248-<br>[2]<br>SEQUENCE FROM N<br>MEDLINE-9233457<br>MCKenzie A.N., Av<br>Punnonen J., Av<br>Punnonen J., Av<br>Punnonen J., Av<br>Punnonen J., Av<br>MCDLINE-9233457<br>MCGUENCE FROM N<br>SEQUENCE FROM N<br>Dolganov G., Le<br>MCGUEN M., Gibs<br>SEQUENCE FROM N<br>TISSUE-BLOOG;<br>MEDLINE-9523762<br>Smirnov D.V., S<br>MIDLINE-9523762<br>Smirnov D.V., S<br>MIDLINE-9523762<br>Smirnov D.V., S<br>TISSUE-BLOOG;<br>MEDLINE-9523762<br>Smirnov D.V., S<br>MEDLINE-9523762<br>Smirnov D.V., S<br>MIDNOV   |
| Muty C., Casel Caput D.; Interleukin-13 Immune response Nature 362:248- [2] SEQUENCE FROM N MEDLINE=9323457 MCKenzie A.N., Punnonn J., Av de Vries J.E., Interleukin 13 monocyte and B- Proc. Natl. Aca [3] SEQUENCE FROM N Dolganov G. Le McGurn M., Gibs Submitted (JUL- [4] TISSUE=Blood; MEDLINE=953762 Smirnov D.V., Si Tandem arrange interleukin-13: Gne 155:277-28 [5] SEQUENCE FROM N SEQUENCE FROM N SEQUENCE FROM N Jang J.S. Kim Submitted (JAN- [6] SEQUENCE FROM N Jang J.S. Kim Submitted (JAN- Jang J.S. Kim J   | E X., Guillemot J.C.,  |
| caput D.; "Interleukin-13 immune 16:2248- Nature 36:2248- Nature 36:2248- Nature 36:2248- SEQUENCE FROM N MEDLINE=93:33457 MCKENZIE A.N.; Punnonen J., Av de Vries J.E.; "Interleukin 13 monocyte and B- Proc. Natl. Aca [3] SEQUENCE FROM N Dolganov G., Le NGGUIN M., Gibs Submitted (JUL- [4] SEQUENCE FROM N TISSUE=Blood; MEDLINE=95:377-28 [5] SEQUENCE FROM N TISSUE=Blood; MEDLINE=95:277-28 [6] SEQUENCE FROM N Jang J.S., Kim SEQUENCE FROM N Jang J.S., Kim SEQUENCE FROM N Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim Submitted (JAN- Jang J.S., Kim  | n P., Miloux B.,<br>I. Shire D. Ferrara P.   |
| "Interleukin-13 immune response Natura 362:248- [2] SEQUENCE FROM N MEDLINE-9323457 MCKENZIE A.N., Av de Vries A.N., Av de Vries J.E., Av SEQUENCE FROM N TISSUE-BLOOG; MEDLINE-9523762 Smirnov D.v., S Tandem arrange interleukin-13: Gene 155:277-28 [5] SEQUENCE FROM N Jang J.S., Kim Submitted (Jul. SEQUENCE FROM N Jang J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim Submitted J.S., Kim   |  |
| immune response Nature 362:248-[2] [2] [2] [2] [3] [2] [3] [4] [5] [5] [6] [6] [6] [6] [7] [7] [8] [8] [8] [8] [8] [8] [8] [8] [8] [8  | regulating inflammatory and  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | vt R., Briere F.,  |
|  | Cocks B.G., Menon S.,  |
|  | ۲.;  |
|  | e that regulates human   |
| 131 SEQUENCE FROM N.A. Dolganov G., Lewis D.B., Lovett M., Burr J., E McGurn M., Gibson C.; Submitted (JUL-1995) to the EMBL/GenBank/DDBJ 4 SEQUENCE FROM N.A. TISSUE-Blood; MEDLINE-95237624; PubMed=7721105; Smirnov D.V., Smirnova M.G., Korobko V.G., Fromitrov D.V., Smirnova M.G., Korobko V.G., Fromitrov D.V., Smirnova M.G., Rorobko V.G., Fromitrov D.V., Smirnova M.G., Rorobko V.G., Fromitrov D.V., Smirnova M.G., Rorobko V.G., Fromitrova D.S., Kim B.E.; SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ 65 MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359;  |  |
| SEQUENCE FROM N.A. Dolganov G., Lewis D.B., Lovett M., Burr J., E McGurn M. Gibson C.; Submitted (JUL-1995) to the EMBL/GenBank/DDBJ [4] SEQUENCE FROM N.A. TISSUB-Blood; MEDLINE-95237624; PubMed=7721105; Smirnov D.V., Smirnova M.G., Korobko V.G., Fromitandem arrangement of human genes for interleukin-13: resemblance in their organization of the second of the secon   | (1993).  |
| Dolganov G., Lewis D.B., Lovett M., Burr J., E McGurn M., Gibson C.; Submitted (JUL-1995) to the EMBL/GenBank/DDBJ SEQUENCE FROM N.A. TISSUB-BLOGG; MEDLINE-95237624; PubMed=7721105; Smirnov D.V., Smirnova M.G., Korobko V.G., From Trandem arrangement of human genes for interlentinterleukin-13: resemblance in their organization of the sequence of the   |  |
| McGurn M., Gibson C.; Submitted (JUL-1995) to the EMBL/GenBank/DDBJ SEQUENCE FROM N.A. TISSUE-Blood; MEDLINE-95237624; PubMed=7721105; Smirnov D.V., Smirnova M.G., Korobko V.G., Frc "Tandem arrangement of human genes for interle<br>interleukin-13: resemblance in their organizat<br>Gene 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  | J., Bort S., Short D.,   |
| Submitted (JUL-1995) to the EMBL/GenBank/DDBJ SEQUENCE FROM N.A. TISSUE-Blood; MEDLINE-9523764; PubMed=7721105; MEDLINE-9523764; PubMed=7721105; MEDLINE-9523764; PubMed=7721105; MEDLINE-95237724; PubMed=7721105; Interleukin-13: resemblance in their organization to 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359;   |  |
| SEQUENCE FROM N.A. TISSUE=Blood; MEDLINE=95237524; PubMed=7721105; MEDLINE=95237524; PubMed=7721105; MEDLINE=95237524; PubMed=7721105; MEDLINE=95237224; PubMed=7721105; MEDLINE=PERM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE=95132583; PubMed=7530359; MEDLINE=95132583; PubMed=7530359; MEDLINE=95132583; PubMed=7530359; MEDLINE=95132583; PubMed=7530359;   | DDBJ databases.  |
| TISSUE-BLOOK, MEDLINE-95237624; PubNed=7721105; MEDLINE-95237624; PubNed=7721105; Smirnov D.V., Smirnova M.G., Fromandem arrangement of human genes for interleukin-13: resemblance in their organizatener 155:277-281(1995).  SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359;   |  |
| MEDLINE-95237624; PubMed=7721105; Smirnov D.V., Smirnova M.G., Korobko V.G., Frc "Tandem arrangement of human genes for interlainterleukin-13: resemblance in their organizatione 155:277-281(1995).  [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; MEDLINE-95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  |  |
| Smirnov D.V., Smirnova M.G., Korobko V.G., Frc "Tandem arrangement of human genes for interleukin-13: resemblance in their organizatione 15:277-281(1995).  [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE=95:32583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  |  |
| "Tandem arrangement of human genes for interle interleukin.13: resemblance in their organizat Gene 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; W.G.; Bamborough P., Duncan D., Richards W.G.;  | Frolova E.I.;  |
| interleukin-13: resemblance in their organizatione 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  | erleukin-4 and   |
| Gene 155:277-281(1995). [5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE=95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  | nization.";  |
| 5] SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE=95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;   |  |
| SEQUENCE FROM N.A. Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  |  |
| Jang J.S., Kim B.E.; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ [6] 3D-STRUCTURE MODELING. MEDLINE=95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;   |  |
| JUNETICE (JAN 1999) LO LIE EMBL/GEIBBBL/DEBJ<br>3D-STRUCTURE MODELING.<br>MEDLINE-95132583; PubMed=7530359;<br>Bamborough P., Duncan D., Richards W.G.;  |  |
| 3D-STRUCTURE MODELING. MEDLINE-95132583; PubMed=7530359; Bamborough P., Duncan D., Richards W.G.;  | untabases.   |
| MEDLINE-95132583; PubMed=7530359;<br>Bamborough P., Duncan D., Richards W.G.;  |  |
| Bamborough P., Duncan D., Richards W.G.;   |  |
|  |  |
| "Fredictive modelling or the 3-D structure or  | e of interleukin-13.";   |
| RL Protein Eng. 7:1077-1082(1994).   |  |

```
IL13_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                            the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;;
                         Helizmann A., Mao X.-O., Akaiwa M., Kreomer R.T.; Gao P.-S., Obshima K., Umeshita R., Abe Y., Braun S., Yamashita T., Roberts M.H., Sugimoto R., Arima K., Arimobu Y., Yu B., Kruses S., Enomoto T., Dake Y., Kawai M., Shimazu S., Sasaki S., Adra C.N., Kitaichi M., Inoue H., Yamauchi K., Tomichi N., Kurimoto F., Hamasaki N., Hopkin J.M., Izuhara K., Shirakawa T., Deichmann K.A.; "Genetic variants of IL-13 signalling and human asthma and atopy."; Hum. Mol. Genet 9:549-559(2000).

-I- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION. SYNERGIZES WITH IL2 IN REGULATING INTERPERON-GAMMA SYNTHESIS.

MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES.
-I- SUBCELLULAR LOCATION: SECRETED.
-I- POLYMOMPHISM: GLN AT POSITION 130 IS A SIGNIFICANT RISK FACTOR FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.1%; Score 448; DB 1; Length 132; 71.0%; Pred. No. 1.2e-38; ive 11; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytokine; Glycoprotein; Signal; 3D-structure; Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123F1DCAB87FD78B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
                                                                                                                                                                                               ASTHMA DEVELOPMENT. SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A -> R (IN REF. 4).
S -> G (IN REF. 5).
MISSING (IN REF. 4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R -> Q.
/FTId=VAR_010037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INTERLEUKIN-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interpro; IPR001325; -. PROSITE; PS00838; INTERLEUKIN_4_13; 1.
                                                                                                                                                                                                                                                                                                                                         EMBL; L06801; AAA36107.1; -.
EMBL; X69079; CAA48824.1; -.
EMBL; X69079; CAA48824.1; -.
EMBL; U311.20; AAB01681.1; -.
EMBL; AF04334; AAC03535.1; -.
PIR; A47481. A47481.
PDB; 31TR; 15-JAN-95.
PDB; 31TR; 26-JAN-95.
                 MEDLINE=20164293; PubMed=10699178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14319 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HLKKLFREGRF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 93; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MIM; 147683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAA-GISSERSRDTKIEVIQLVKNLLT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
                                                                                                                                                                                                                                                                                             Buitkamp J., Jann O., Fries R.;
Buitkamp J., Jann O., Fries R.;
Buitkamp J., Jann O., Fries R.;
The bovine interleukin-13 gene: genomic organization, chromosomal location and evolution of the promoter.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
--- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
SYNERGIZES WITH IL2 IN REGULATING INTERFERON-GAMMA SYNTHESIS. MA
BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES (BY
                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL). (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LINKED (GLCNAC. . .) (PO 723BD42375C161F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 412; DB 1;
Pred. No. 5.3e-35;
16; Mismatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rel. 39, Created)
(Rel. 39, Last sequence update)
(Rel. 39, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00838; INTERLEUKIN_4_13; 1.
Cytokine; Glycoprotein; Signal.
1 20 BY SIMILARITY.
CHAIN 21 132 INTERLEUKIN.13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62.6%; Score 412; 65.6%; Pred. No. 5
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: SECRETED.
                                                                                                                 INTERLEUKIN-13 PRECURSOR (IL-13).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AJ132441; CAB46636.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14623 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
132
76
90
38
49
                                                                                                                                                                                                                            Bovidae; Bovinae; Bos.
NCBI_TaxID=9913;
                                                                                                                                                             taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119 YVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : | |:|: |
121 HSRIVFRNERF 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
86; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48
64
38
49
75
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY)
                                           30-MAY-2000
30-MAY-2000
                                                                                         30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IL13_MOUSE
P20109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.13_MOUSE

1D 11.13_MC

AC P20109;

DT 01-FEB-

DT 01-FEB-

DT 11-JUE-

DE INTERLI
```

;

RESULT

```
116 LLTYVRGVYRHGN 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 LLNYSKOLFRYGH 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse)
                                                                                                                                                            SIMILARITY
                                             SEQUENCE FROM N.A.
                       NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                        22
52
68
68
42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPRE_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                             (BY
                                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPR.
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
                                                                                      Erown K.D., Zurawski S.M., Mosmann T.R., Zurawski G.;
"A family of small inducible proteins secreted by leukocytes are members of a new superfamily that includes leukocyte and indicators of various activation processes.";
J. Immunol. 142:679-687(1989).
-!- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION. SYNERGIZES WITH ILZ IN REGULATING INTERPERON GAMMA SYNTHESIS.
MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY STRIBED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58.5%; Score 385; DB 1; Length 131; 58.6%; Pred. No. 2.9e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               954F93F105713FED CRC64;
                                                                                                                                                                                           (BY SIMILARITY).
-!- SUBCELLULAR LOCATION: SECRETED.
-!- SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Pred. No. 2.9e-32; 19; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                           INTERLEUKIN-13.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131 AA
                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00838; INTERLEUKIN 4 13; 1.
                                                                  SEQUENCE FROM N.A. MEDLINE-89093958; Pubmed=2521353;
                                                                                                                                                                                                                                                                                                                                                                                                              BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14107 MW;
                                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein; Signa
                                                                                                                                                                                                                                                                                                                                  EMBL; M23504; AAA40149.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTYVRGVYRHGNF 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |:| : ::||| |
LSYTKQLFRHGPF 131
                                                                                                                                                                                                                                                                                                                                            PIR; E30552; E30552.
HSSP; P35225; 31TR.
MGD; MGI:96541; Ill3.
InterPro; IPR001325;
             Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 78; Conserv
                                           NCBI_TaxID=10090;
IL13 OR IL-13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IL13 OR IL-13
                                                                                                                                                                                                                                                                                                                                                                                                      Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IL13_RAT
P42203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IL13_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profilt institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56 NLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKN 115
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MALWLTVVIALTCLGGLASPSPV----TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSV 55
                                                                                                                                                                                       MEDINE-94092138 PubMed-7916615;
Lakkis F.G., Cruet E.N.;
"Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13
gene expression in experimental glomerulomephritis.";
Biochem. Blophys. Res. Commun. 197:612-618(1993)
-!- FONCTION. CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
SYNERGIZES WITH ILZ IN REGULATING INTERPERON-GAMMA SYNTHESIS.
MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBL_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
ESCONGCABBDEBGZO1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57.5%; Score 378.5; DB 1; Length 131; 59.4%; Pred. No. 1.3e-31; tive 21; Mismatches 26; Indels 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -i- SUBCELLULAR LOCATION: SECRETED.
-i- SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q64105; Q63996;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INTERLEUKIN-13.
                                                                                                                                                                STRAIN-SPRAGUE-DAWLEY; TISSUE-Kidney cortex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interpro; IPR001325; -. PROSITE; PS00838; INTERLEUKIN_4_13; 1. Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21, 9 BY
131 IN
180 BY
94 BY
42 NY
75 N-
76 N-
121 N-
14093 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; L26913; AAA16478.1; -. HSSP; P35225; 3ITR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 59.4%
Matches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
```

118 LAEVNNYWALNLTS-MLCLTSGTLNAFQDSPGLSKTVVNISSLCALQPYKGWGLYCAGKA 176

102 SRDTKIEVIQLVK---NLLTYVRG 122

```
염
                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its was by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a alicense agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -i- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
-i- CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X-RAY CRYSTALLOGRAPHY (1.25 ANGSTROMS).
MEDLINE-98070299; PubMed-9405351;
Auerbach G., Herrmann A., Gutlich M., Fischer M., Jacob U., Bacher A.,
                                                                                                 oţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LKVVLAAADLGTEAGVQRLLSAVRELPRPEGLQRLLLINNAATLGDVSKGFLNVN----D 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG----ISSER 101
                                                                                          "Mouse sepiapterin reductase: an enzyme involved in the final step or tetrahydrobiopterin biosynthesis. Primary structure deduced from the
                                                                                                                                                                                                                                                                                                                                                                                                        'Cloning of mouse sepiapterin reductase gene and characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 209-261 FROM N.A. MEDILINE-94136218; PubMed-8304109; Maler J., Schott K., Werner T., Bacher A., Ziegler I.; "Northern blot analysis sepiapterin reductase mRNA in mammalian cell lines and tissues.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Huber R.;
"The 1.25.A crystal structure of seplapterin reductase reveals its
binding mode to pterins and brain neurotransmitters.";
EMBO J. 16:7219-7230(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTVVIALTCLGGLAS-----PSP----VTPSPTLKELIEELVNITQNQAS
                                                                                                                                                                                                                                                                                                                                             S.W., Park I.Y., Hahn Y., Lee J.E., Seong C.S., Chung J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PTERIN BINDING (POTENTIAL).

D -> G (IN REF. 2).

102294E439CB8AEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <del>..</del>
<del>..</del>
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NADP (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.3%; Score 74.5; DB 1; 22.2%; Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           1ts promoter region.";
Biochim. Biophys. Acta 1445:165-171(1999).
                                                                                                                                                                                     Biochim. Biophys. Acta 1260:320-322(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Exp. Med. Biol. 338:195-198(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U78077; AAC69364.1; -
U78076; AAC69364.1; JOINED.
S71375; -; NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3D-structure.
                                                                                                                                                                                                                                                                                                             MEDLINE-99227131; PubMed-10209270;
                                MEDLINE-95178553; Pubmed-7873607;
                                                          Ota A., Ichinose H., Nagatsu T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27883 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00106; adh_short; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; S77493; AAB33611.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _
_
:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oxidoreductase; NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MGD; MGI:103078; Spr.
InterPro; IPR002198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDB; 1NAS; 30-MAR-99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDB; 1SEP; 13-JAN-99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261 AA;
                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                           cDNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simmatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RRARAR RR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation. the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 LOVVLAAADLGTESGVQQLLSAVRELPRPERLQRLLLINNAGTLGDVSKGFLNIN----D 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 LAEVNNYWALNLTS-MLCLTTGTLNAFSNSPGLSKTVVNISSLCALQPFKGWGLYCAGKA 176
                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochem. Biophys. Res. Commun. 173:627-631(1990).
-1- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
-1- CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) - SEPIAPTERIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46 LCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG----ISSER 101
                                                                                                                                                                                                                                                                                                                                                                                                                            "Isolation and expression of rat liver sepiapterin reductase cDNA."; Proc. Natl. Acad. Sci. U.S.A. 87:6436-6440(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5 LTVVIALTCLG-----GLASPSPVTPSP------TLKELIEELVNITQNQAS 45
                                                                                                                                                                                                                                                                                                                                                                                       Citron B.A., Milstien S., Gutierrez J.C., Levine R.A., Yanak B.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oyama R., Katoh S., Sueoka T., Suzuki M., Ichinose H., Nagatsu T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.3%; Score 74.5; DB 1; Length 262; 23.6%; Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "The complete amino acid sequence of the mature form of rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
EC992564A0334C61 CRC64;
                                                                                                                                         01-NoV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
                                                                                                      262 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26; Mismatches
                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACETYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002198; -.
Pfam; PF00106; adh_short; 1.
Oxidoreductase; NADP; Acetylation.
                                                                                                                                                                                                                                                                                                                                                   TISSUE=Liver;
MEDLINE=90349631; PubMed=2201030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=91083647; PubMed=2260974;
:|| :|: | ARDMLYQVLAAEEPSVRVLSYAPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28128 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; M36410; AAA42130.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34; Conservative
                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sepiapterin reductase.";
                                                                                                                                                                                                                                      Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A36400; A36400.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                              NCBI_TaxID=10116;
                                                                                                                                       01-NOV-1990
01-NOV-1990
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                             Kaufman S.;
                                                                                                      SPRE_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOD_RES
NP_BIND
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Titani
                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
           q
                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

. 9

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
2
                                                                                                                                                                                                                                                                                             -!- SUBCELLULAR LOCATION: UNCLEAR.
-!- DEVELOPMENTAL STAGE: THIS HISTONE IS A TESTIS-SPECIFIC HI VARIANT
THAT APPEARS DURING MEIOSIS IN SPERMATOGENESIS.
-!- SIMILARITY: BELONGS TO THE HISTONE HI/H5 FAMILY.
PIR; A02581; HSPG11.
                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001386; -. Pfam: PF00538; linker_histone; 1. Chromosomal protein; Nuclear protein; DNA-binding; Multigene family; Acetylation; Spermatogenesis; Testis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16 GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75
                                                                                                                                                                                                                  MEDLINE-85054795; pubmed-6389534;
Cole K.D., York R.G., Kistler W.S.;
"The amino acid sequence of boar Hlt, a testis-specific Hl histone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SAIQRTQRMLKALCSQKPAAGISSERSRD-TKIEVIQLV-KNLLTYVRGVYRHGNFR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------KALA----AAGYDVEKNNSRIKLGLKSLVGKGILVQTRGTGASGSFK 109
                                                                                                                                                   Sus scrofa (Pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                              J. Biol. Chem. 259:13695-13702(1984).
-1- FUNCTION: HISTONES HI ARE NECESSARY FOR THE CONDENSATION OF NUCLEOSOME CHAINS INTO HIGHER ORDER STRUCTURES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Eut
Mammalia, Eutheria, Lagomorpha, Leporidae, Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                 EACA47C51A8F5364 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
ACROSIN PRECURSOR (EC 3.4.21.10).
                                                                                                       01-JAN-1988 (Rel. 06, Created)
01-JAN-1988 (Rel. 06, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
                                                                                      211 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                11.2%; Score 73.5; Dilarity 26.5%; Pred. No. 1.9; Conservative 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    431 AA
                                                                                                                                                                                                                                                                                                                                                                                                           ACETYLATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-TESTIS;
MEDLINE-94368861; Pubmed-8086468;
Richardson R.T., O'Rand M.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                      PRT;
                      177 ARDMLYQVLAVEEPSVRVLSYAPG 200
         102 SRDTKIEVIQLVK---NLLTYVRG 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryctolagus cuniculus (Rabbit)
                                                                                                                                                                                                                                                                                                                                                                                                                                22059 MW;
                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                      112
                                                                                                                                                                                                                                                                                                                                                                                                                                211 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 31; Conserv
                                                                                                                                                                                                                                                                                                                                                       HSSP; P08287; 1GHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9986;
                                                                                                                                                                                     NCBI_TaxID=9823;
                                                                                                                                         HISTONE HIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACRO_RABIT
P48038;
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                           SEQUENCE
                                                                                    H1T_PIG
P06348;
                                                                                                                                                                                                                                                      variant.
                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACRO_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                              RESULT
H1T_PIG
                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                            "Cloning and sequencing of cDNAs for rabbit preproacrosin and a novel preproacrosin-related cDNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10 ALTCL---GGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAAL 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N'LINKED (GICNAC. ..) (POTENTIAL).
N'LINKED (GICNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEROPS; SU1.223;
InterPro; IPR001254;
InterPro; IPR001254;
InterPro; IPR001254;
InterPro; IPR001254;
InterPro; IPR00120;
InterPro; IPR00120;
InterPro; IPR00120;
InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; Inter
                                                                                                                                                                                                                                                                                                                                                                                                                              THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED (GLCNAC. .) (POTENTIAL).
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACROSIN LIGHT CHAIN (BY SIMILARITY),
ACROSIN HEAVY CHAIN (BY SIMILARITY),
                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1; ALSO KNOWN AS TRYPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPH_HUMAN STANDARD; PRT; 482 AA.
P19971; 013390;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
THYMIDINE-PHOSPHORYLASE PRECURSOR (EC 2.4.2.4) (TDRPASE) (TP
(PLATELET-DERIVED ENDOTHELIAL CELL GROWTH FACTOR) (PD-ECGF)
(GLIOSTATIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10.9%; Score 72; DB 1; Length 431; 32.3%; Pred. No. 6.3; 1ive 8; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1C015A4E0BC0C668 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRO-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U05204; AAA61630.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
208
140
238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
152
160
160
244
223
264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best_Local Similarity
Matches 20; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACT_SITE
ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67 ES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      227
```

'n

```
Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nishino I., Spinazzola A., Hirano M.; "Thymidine phosphorylase gene mutations in MNGIE, a human mitochondrial disorder.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDILINE=92272724; PubMed=1590793; USuki K., Saras J., Waltenberger Thomason A., Heldin C.-H.; mplateitat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Platelet-derived endothelial cell phosphorylase activity.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Neurotrophic action of gliostatin on cortical neurons. gliostatin and platelet-derived endothelial cell growth \sigma. Biol. Chem. 267:20311-20316(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL SEQUENCE.

MEDLINE-93015908; PubMed-1400349;

MEDLINE-93015916 K., Isobe I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-99123033; PubMed-9924029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Blochem. Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ISHIKAWA F., MIYAZONO K., Hellman U., Drexler H., Wernstedt C., Hagiwara K., Usuki K., Takaku F., Risau W., Heldin C.-H.; "Identification of angiogenic activity and the cloning and expression of platelet-derived endothelial cell growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANTS MNGIE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Miyamoto T., Kato T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fukui K., Yamada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Furukawa T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 149-244 FROM N.A., AND MEDLINE=92236753; PubMed=1570012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 338:557-562(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=89181955; PubMed=2467210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Adams M.D., Kerlavage A.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'Anglogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                  PATHWAY: NUCLECTIDE AND DEOXYRIBONUCLECTIDE CATABOLISM.
SUBUNIT: HOMODIMER.
DISEASE: DEFECTS IN ECGF1 ARE THE CAUSE OF MITOCHONDRIAL
NEUROGASTROINTESTINAL ENCEPHALOMYOPATHY (MNGIE) (ALSO KNOWN AS
MYONEUROGASTROINTESTINAL ENCEPHALOMYOPATHY); AN AUTOSOMAL
RECESSIVE HUMAN DISEASE ASSOCIATED WITH MULTIPLE DELETIONS OF
SKELETAL MUSCLE MITOCHONDRIAL DNA (MTDNA). IT IS CLINICALLY
CHARACTERIZED BY ONSET BETWEEN THE SECOND AND FIFTH DECADES OF
LIFE, PTOSIS, PROGRESSIVE EXTERNAL OPHTHALMOPLEGIA,
                                                                                                                                                                                                                                                               CATALYTIC ACTIVITY: THYMIDINE + PHOSPHATE = THYMINE + 2-DEOXY-D-RIBOSE 1-PHOSPHATE.
                                                                                                                                                                                                                                                                                                                                  ENDOTHELIAL CELLS IN VITRO.

FUNCTION: CATALYSES THE REVERSIBLE PHOSPHOROLYSIS OF THYMIDINE.

THE PRODUCED MOLECULES ARE THEN UTILIZED AS CARBON AND ENERGY
SOURCES OR IN THE RESCUE OF PYRIMIDINE BASES FOR NUCLEOTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: MAY HAVE A ROLE IN MAINTAINING THE INTEGRITY OF THE BLOOD VESSELS. HAS GROWTH PROMOTING ACTIVITY ON ENDOTHELIAL CELLS, ANGIGGENIC ACTIVITY IN VIVO AND CHEMOTACTIC ACTIVITY ON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                356:668-668(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283:689-692(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ċ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM N.A., AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (JUL-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (XXX-1991) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goodey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yoshimura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Commun. 184:1311-1316(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Courtney M., Sleep D.; the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sumizawa T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fuldner R.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J.,
  (OFTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eksioglu Y.Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             growth factor has thymidine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 125-178 AND 236-244.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Miyazono K.,
PSEUDOOBSTRUCTION), DIFFUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Haraguchi M., Akiyama S.-I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Phillips C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hirano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pierce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Identity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ი
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ната
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
```

```
AC DT DT DT DE DE DE OS
                                                                                                                                                                           δõ
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                      Š
                                                                                                       RYNR_HUMAN
                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                 Matches ·
                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000312; ...
InterPro; IPR000312; ...
InterPro; IPR000312; ...
Pfam; PP00591; Glycos_transf_3; 1.
PROSITE; PS00647; THYMID_PHOSPHORYLASE; 1.
PROSITE; PS00647; THYMID_PHOSPHORYLASE; Clemotaxis;
PROSITE; PS00647; THYMID_PHOSPHORYLASE.

"""ScPHORYLASE.
                                      P21817;
01-MAY-1991 (Rel. 18, Created)
01-MAY-1991 (Rel. 18, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                      CONFLICT
CONFLICT
SEQUENCE
            CHANNEL).
RYR1 OR RYDR
                                  RYANODINE
                                                                                           RYNR_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M63193; AAA60043.1; EMBL; U62317; AAB03344.1;
                                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                      327
                                                                                                                                                                                                  285
                                                                                                                                                                           65
                                                                                                                                                                                                                        u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LEUKOENCEPHALOPATHY, MYOPATHY. SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DATABASE: NAME=R&D Systems, cytokine source book; www="http://www.rndsystems.com/cyt_cat/pdecgf.html"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131222; 603041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PHOSPHORYLASES
 sapiens
                                                                                                                                                   AARVAAALDDGSALGRFERMLAAQGVDPGLARALCSGSPA
                                                                                                                                                                         ALESLINVSDCSAIQRTQRML-----KALCSQKPA
                                                                                                                                                                                                  LEVEEALLCMDG-AGP-----PDLRDLVTTL-----
                                                                                                                                                                                                                       LTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S03904; S03904.
                                                                                                                                                                                                                                                         Similarity
                                  RECEPTOR,
                                                                                                                                                                                                                                                                                                    444
452
482
                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                      471
                                                                                                                                                                                                                                                                                                                                                                            397
                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                        222
(Human)
                                                                                                                                                                                                                                                                                                        AA;
                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  482
279
342
401
461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FAMILY
                                                                                                                                                                                                                                                                                                                                                     471
                                                                                                                                                                                                                                                                                                                                                                            398
                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                        222
                                                                                                                                                                                                                                                                                                                                                                                                                                               153
                                    SKELETAL MUSCLE
                                                                                                                                                                                                                                                                                                        49981 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rmatics Institute. There are no restinstitutions as long as its content
                                                                                                                                                                                                                                                          10.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TO THE THYMIDINE/PYRIMIDINE-NUCLEOSIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THIN BODY HABITUS, PERIPHERAL NEUROPATHY,
                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                           Pred. No. 7.2;
1; Mismatches
                                                                                                                                                                                                                                                                                                   G -> R (IN REF. 3).
S -> N (IN REF. 3).
, 0652FA132C3BDE28
                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R-A-L-X-X-A-L-V-L.
G -> R (IN MNGIE).
                                                                                                                                                                                                                                                                                                                                                                          /FTId=VAR_007646.
MISSING (IN MNGIE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R-V-A-A-A-L-X(5,6)-L-G-R.
R-V-A-A-A-L-X(5,6)-L-G-R.
                                                                                                                                                                                                                                                                                                                                                                                                K -> S (IN MNGIE).
/FTId=VAR_007645.
E -> A (IN MNGIE).
                                                                                                                                                                                                                                                                                                                                         /FTId=VAR_007648
                                                                                                                                                                                                                                                                                                                                                     /FTId=VAR_007647
L -> S.
                                                                                                                                                                                                                                                                                                                                                                                                                                               /FTId=VAR_007643.
G -> S (IN MNGIE).
                                                                                                                                                                                                                                                                                                                                                                                                                                   /FTId-VAR
                                                                                           PRT;
                                                                                                                                                                                                                                                        No.
                                                                                           5032
                                  (SKELETAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (See http://www.isb-sib.ch/announce/
                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                     007644.
                                                                                                                                                                                                                                                         DB 1;
7.2;
                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Usage by
                                  MUSCLE
                                                                                                                                                    366
                                                                                                                                                                           94
                                                                                                                                                                                                ---GGALLWLSGHAGTQAQG
                                                                                                                                                                                                                                                                    Length 482;
                                                                                                                                                                                                                                                                                                       CRC64;
                                  CALCIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in no way commercial
                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                             4
```

~

```
VARIANTS CCD CYS-163 AND MET-403.
MEDLINE=94035118; PubMed=8220423;
Quane K.A., Healy J.M.S., Reating K.E., Manning B.M., Couch F.J.,
Palmucci L.M., Doriguzzi C., Fagerlund T.H., Berg K., Ording H.,
Bendixen D., Mortier W., Linz U., Muller C.R., McCarthy T.V.;
"Mutations in the ryanodine receptor gene in central core disease and malignant, hyperthermia.";
                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT MH CXS-614.
MEDLINE=92128959; PubMed=1774074;
Gillard E.F., Otsu K., Fujii J., Khanna V.K., de Leon S.,
Derdemezi J., Britt B.A., Duff C.L., Worton R.G., McLennan D.H.;
A substitution of cysteine for arginine 614 in the ryanodine receptor is potentially causative of human malignant hyperthermia.";
Genomics 11:751-755(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT MH ARG-341.
MEDLINE-94282042; PubMed-8012359;
Quane K.A., Keating K.E., Manning B.M., Healy J.M.S., Monsieurs K., Heffron J.J.A., Lehane M., Heytons L., Krivosic-Horber R., Adnet P., Heffron J.J., Monnier N., Lunardi J., McCarthy T.V.;
"Detection of a novel common mutation in the ryanodine receptor gene in malignant hyperthermia: implications for diagnosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT MH ARG-2433.
MEDLINE-95152512; PubMed-7849712;
Keating K.E., Quane K.A., Manning B.M., Lehane M., Hartung E.,
Censter K., Urwyler A., Klausnitzer M., Muller C.R., Heffron J.J.A.,
McCarthy T.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-92372020; PubMed-1354662; Gillard E.F., Otsu K., Fujii J., Duff C., de Leon S., Khanna V.K., Britt B.A., Worton R.G., McLennan D.H.; Polymorphisms and deduced amino acid substitutions in the coding sequence of the ryanodine receptor (RYRI) gene in individuals with malignant hyperthermia.":
                                                                                                                                                     TISSUE-Skeletal muscle;

MEDLINE-90130482; PubMed-2298749;

Morbine F., Fujii J., Otsu K., Phillips M., Green N.M., Lai F.A.,
Meissner G., Maclennan D.H.;

Molecular cloning of cDNA encoding human and rabbit forms of the
Ca2+ release channel (ryanodine receptor) of skeletal muscle
sarcoplasmic reticulum.";
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-94035117; PubMed-8220422,
Zhang Y., Chen H.S., Khanna V.K., de Leon S., Phillips M.S.,
Schappert K., Britt B.A., Brownell A.K.W., Maclennan D.H.;
"A mutation in the human ryanodine receptor gene associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT MH ARG-248, AND VARIANTS CYS-471; LEU-1786 AND CYS-2059.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Mutation screening of the RYR1 gene in malignant hyperthermia: detection of a novel Tyr to Ser mutation in a pedigree with associated central cores."; Genomics 23:236-239(1994).
                               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-95130087; PubMed-7829078;
Quane K.A., Keating K.E., Healy J.M.S., Manning B.M.,
Krivosic-Horber R., Krivosic I., Monnier N., Lunardi J.,
                                                                                                                        SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                    Biol. Chem. 265:2244-2256(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heterogeneity studies.";
Hum. Mol. Genet. 3:471-476(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genomics 13:1247-1254(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         central core disease.";
Nat. Genet. 5:46-50(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genet. 5:51-55(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT CCD HIS-2434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT MH SER-522.
                                                            NCBI_TaxID=9606;
ARKARRITIRAR KARITIRAR KARITIRAR KARITIRAR KARAKARITIRAR KARAKARITIRA KARAKARITIRA KARAKARITIRA KARAKARAKA KARAKA ```

Barone V., Massa O., Intravaia E., Bracco A., Di Martino A., Tegazzin V., Cozzolino S., Sorrentino V.; "Mutation screening of the RYRI gene and identification of two novel mutations in Italian malignant hyperthermia families."; Lynch P.J., Krivosic Horber R., Reyford H., Monnier N., Quane K., Adnet P., Haudecoeur G., Krivosic I., McCarthy T., Lunardi J.; "Identification of heterozygous and homozygous individuals with the novel RRI mutation Cyslashrg in a large kindred."; Anesthesiology 86:620-626(1997). in an (RYR1) in malignant hyperthermia: genotype-phenotype correlation."; Am. J. Hum. Genet. 62:599-609(1998). "Novel mutations at a CpG dinucleotide in the ryanodine receptor in Manning B.M., Quane K.A., Ording H., Urwyler A., Tegazzin V., Lehane M., O'Halloran J., Hartung E., Giblin L.M., Lynch P.J., Vaughan P., Censier K., Bendixen D., Comi G., Heytens L., Monsieurs K., Fagerlund T., Wolz W., Heffron J.J.A., Mueller C.R., "Screening of the ryanodine receptor gene in 105 malignant hyperthermia families: novel mutations and concordance with the in vitro contracture test."; vitro contracture test."; Detection of a novel RYR1 mutation in four malignant hyperthermia "The substitution of Arg for Gly2433 in the human skeletal muscle Fagerlund T., McCarthy T.V.;
"Detection of a novel mutation at amino acid position 614 in the ryanodine receptor in malignant hyperthermia.";
Br. J. Anaesth. 79:332-337(1997). MEDLINE-95187158; Pubmed-7881417; Phillips M.S., Khanna V.K., de Leon S., Frodis W., Britt B.A., MEDLINE-97284075; PubMed-9138151; Keating K.B., Lehane M., Keating K.B., Giblin L., Lynch P.J., Quane K.A., Lehane M., Heffron J.J.A. McCarthy T.V.; "Detection of a novel mutation in the ryanodine receptor gene is Irish mailignant hyperthermia pedigree: correlation of the IVCT response with the affected and unaffected haplotypes."; J. Med. Genet. 34:291-296(1997). MEDLINE-98111378; PubMed-9450902; Manning B.M., Quane K.A., Lynch P.J., Urwyler A., Tegazzin V., Krivosic-Horber R., Censier K., Comi G., Adnet P., Wolz W., Lunardi J., Muller C.R., McCarthy T.V.; ryanodine receptor is associated with malignant hyperthermia. Hum. Mol. Genet. 3:2181-2186(1994). McCarthy T.V., "Identification of novel mutations in the ryanodine-receptor MEDLINE=99415746; Pubmed=10484775; Brandt A., Schleithoff L., Jurkat-Rott K., Klingler W., Baur MEDIINE-98051290; PubMed-9389851; Quane K.A., Ording H., Keating K.E., Manning B.M., Heine Bendixen D., Berg K., Krivosic-Horber R., Lehmann-Horn F. VARIANTS MH CYS-2162; HIS-2162; MET-2167 AND MET-2205. Hum. Mol. Genet. 3:1855-1858(1994). MEDLINE=99158296; PubMed=10051009; VARIANTS MH CYS-2458 AND HIS-2458. VARIANTS MH LEU-2434 AND HIS-2453, MEDLINE=98163444; PubMed=9497245; MEDLINE=97219028; PubMed=9066328; Mutat. 11:45-50(1998). malignant hyperthermia. VARIANT MH ARG-2433 VARIANT MH LEU-614. VARIANT MH TRP-552. VARIANT MH ARG-35. Lehmann-Horn F.; McLennan D.H.; pedigrees." VARIANTS MH Hum. 

```
RESULT
SPRE_HUN
ID SPR
AC P35
DT 01:
DT 01:
DT 01:
CN SEE
GN SPR
   Š
  В
  Š
  В
   á
  吕
   Matches
  Query Match
  SPRE_HUMAN
P35270;
01-FEB-1994
01-FEB-1994
01-OCT-2000
  HUMAN
                SPR
  J. меd.
[17]
   HOMO
                              SEPIAPTERIN
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
  the
   -
  -
  hyperthermia.";
  Gencik M., Gencik A., Mortier W.,
  MEDLINE-20081079;
  "Novel mutation in the RYR1
   VARIANTS MH CYS-2453
  641
  581
  121 RGV 123
  521
  77
  29
  Local
  European
  STRUCTURE INTERACTS WITH THE CYTOPLASMIC REGION OF THE DIHYDROPYRIDINE RECEPTOR.
MISCELLANEOUS: RYANODINE IS AN ALKALOID THAT BINDS TO THE CA-RELEASE CHANNEL IN JUNCTIONAL SR AND MODULATES ITS ACT. SIMILARITY: LOCAL & LOW WITH THE NICOTINIC ACETYLCHOLINE J
  OF MALIGNANT HYPERTHERMIA (MH) AND OF CENTRAL CORE DISEASE OF MUSCLE (CCD). MH IS AN AUTOSOWAL DOWLNANT DISORDER OF SKELETAL MUSCLE AND IS ONE OF THE MAIN CAUSES OF DEATH DUE TO ANESTHESIA. IN SUSCEPTIBLE PEOPLE, AN MH EPISODE CAN BE TRIGGERED BY ALL COMMONLY USED INHALATIONAL ANESTHETICS SUCH AS HALOTHANE AND BY DEPOLARIZING MUSCLE RELAXANTS SUCH AS SUCCINYLCHOLINE. THE CLINICAL FEATURES OF THE MYOPATHY ARE HYPERTHERMIA, ACCELERATED MUSCLE METABOLISM, CONTRACTURES, METABOLIC ACIDOSIS, TACHYCARDIA AND DEATH, IF NOT TREATED WITH THE POSTSYNAPTIC MUSCLE RELAXANT, DANTROLENE. SUSCEPTIBILITY TO MH CAN BE DETERMINED MITH THE "IN
   FUNCTION: COMMUNICATION BETWEEN TRANSVERSE-TUBULES AND SARCOPLASMIC RETICULUM. CONTRACTION OF SKELETAL MUSCLE TRIGGERED BY RELEASE OF CA++ FROM SR FOLLOWING DEPOLAR:
  (MHN), THOSE WITH ABNORMAL RESPONSE TO CAFFEINE ALONE OR HALOTHANE ALONE ARE MH EQUIVOCAL (MHE(C) AND MEH(H) RESPECTIVELY) MISCELLANEOUS: THE CALCIUM RELEASE CHANNEL IS MODULATED BY CA++,
  VITRO" CONTRACTURE TEST (IVCT): OBSERVING THE MAGNITUDE OF CONTRACTURES INDUCED IN STRIPS OF MUSCLE TISSUE BY CAFFEINE ALONE AND HALOTHANE ALONE. PATIENTS WITH NORMAL RESPONSE ARE MH NORMAL
  TSI
  T-TUBULES
sapiens
  (N-ACHR) SUBUNITS.
  LYELLASLIRGNRSNCALFSTNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 580
   LKELIEELVNITQNQASLCNGSMVWSVN------LTAGMYCAALES--LINVSDCS 76
   HIKSIISLLDKHGRNHKVLDVLCSLCVCNGVAVRSNQDLITENLLPGRELLLQTNLINYV
  AIQ------VIQLVKNLLTYV 120
   Similarity
  643
                            (Rel. 28,
(Rel. 28,
(Rel. 40,
REDUCTASE
   15:122-122(2000)
   Conservative
   Bioinformatics Institute.
  STANDARD;
  36:115-118(1999)
  PubMed=10612851;
   10.9%;
                            Last
Last
(EC 1
  Created)
                           t sequence update)
t annotation updat
1.1.1.153) (SPR).
   26;
  er W., Epplen J.T. gene (R2454C) in
   Score 72;
Pred. No.
   PRT;
   Mismatches
   261
   There are
  DB 1;
   1e+02
   FOLLOWING DEPOLARIZATION
  RECEPTOR MAY BE THE CENTRAL CORE DISEASE
   a patient with malignant
   Length 5032;
   Indels
   no
   restrictions
   ACTIVITY
  28;
  \mathbf{SI}
   RECEPTOR
  OF
  Gaps
   640
   OF.
   ဝဌ
   its
  4;
```

```
밁
   Ş
   밁
   Š
  RESULT
   Matches
  Query Match
Best Local
   YA88_SCHPO
Q09775;
Q1-NOV-1995
Q1-NOV-1995
Q1-NOV-1995
   NP_BIND
Lye G., Churcher C.M., Barrell B.G., Rajandream M.A., Submitted (SEP-1995) to the EMBL/GenBank/DDBJ database -i- FUNCTION: PUTATIVE ATP-DEPENDENT RNA HELICASE.
   STRAIN=972;
  PUTATIVE ATP-DEPENDENT SPAC22F3.08C.
  SCHPO
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  Ichinose H., Katch S., Suecka T., Titani K., Fujita K., Nagatsu T., "Cloning and sequencing of cDNA encoding human sepiapterin reductase -- an enzyme involved in tetrahydrobiopterin biosynthesis. Biochem. Biophys. Res. Commun. 179:183-189(1991).
-!- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRAHYDROBIOPTERIN. BIOSYNTHESIS. TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
   SEQUENCE FROM N.A.
   Schizosaccharomyces
  Schizosaccharomycetales;
  Eukaryota;
  Schizosaccharomyces pombe (Fission yeast)
  NCBI_TaxID=4896
  SEQUENCE
  Oxidoreductase;
  Pfam; PF00106; adh_short; 1
  MIM;
  EMBL; M76231; AAA60314.1;
PIR; JQ1176; JQ1176.
   MEDLINE=91354248; PubMed=1883349;
   MOD_RES
   -!- CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) =
  SEQUENCE FROM N.A.
   NCBI_TaxID=9606;
  Eukaryota; Metazoa;
Mammalia; Eutheria;
   InterPro;
  163
   104
   93
  36
   DISEASE: DEPRESSED
   SUBCELLULAR LOCATION: CYTOPLASMIC.
DISEASE: DEPRESSED SYNTHESIS OF TETRAHYDROBIOPTERIN MAY PLAY
  ROLE IN A VARIETY OF HUMAN DISEASES.
  SUBUNIT: HOMODIMER.
  182125
  PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG
  PAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG
  LGDVSKGFVDLSDSTQVNNYWALNLTS-MLCLTSSVLKAFPDSPGLNRTVVNISSLCALQ 162
  LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 92
   24;
   Similarity
  1
13
28
261
   IPR002198; -
   Fungi; Ascomycota;
   (Rel. 32, Created)
(Rel. 32, Last sequence update)
(Rel. 32, Last annotation update)
P-DEPENDENT RNA HELICASE C22F3.08C
   Conservative
  AA;
   STANDARD;
  NADP;
   32 I
28048 MW;
  Chordata;
Primates;
   10.98;
   39
  Acetylation
   Schizosaccharomycetaceae;
   21;
  NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
9C9BF76212826F47 CRC64;
  Pred.
  Score
   ACETYLATION (BY SIMILARITY).
  Schizosaccharomycetes;
   PRT;
  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
   Mismatches
   <u>N</u>
   71.5;
   481
   A
  DВ
   122
  199
   41;
            databases
   Length
                            Walsh
   biosynthesis.";
   SEPIAPTERIN +
  11;
  Gaps
  4.
```

```
g
  δ
  qq
   δ
  4;
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                     This SWISS-PROT entry is copyright. It is produced through a collaboration
  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
   EMBL outstation
   between the Swiss Institute of Bioinformatics and the EMBL outstatine the Buropean Bloinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commer
  -:- SUBCELLULAR LOCATION: NUCLEAR.
-:- DEVELOPMENTAL STAGE: THIS HISTONE IS A TESTIS-SPECIFIC H1 VARIANT THAT APPEARS DURING MELOSIS IN SPERMATOGENESIS.
-:- SIMILARITY: BELONGS TO THE HISTONE H1/H5 FAMILY.
   Gaps
  25 PSPTLKEL-IEELVNITQNQASLCNGSMVWSV-NLTAGMYCAALESLINVSDCSAIQRTQ 82
   18 PQPSIKEKERAKKLQGITKGKAKVTGNNPVDPIEEFPEGILCENLKKQ-NITECTTIQR-- 74
   Koppel D.A., Wolfe S.A., Fogelfeld L., Grimes S.R.;
"Primate testicular histone Hlt genes are highly conserved and the human Hlt gene is located on chromosome 6.";
J. Cell. Blochem. 54:219-230(1994).
-i. FUNCTION: HISTONES H1 ARE NECESSARY FOR THE CONDENSATION OF NUCLEOSOME CHAINS INTO HIGHER ORDER STRUCTURES.
   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
  5,
  Length 481;
SIMILARITY: BELONGS TO THE "DEAD" BOX FAMILY HELICASE.
   Hypothetical protein; ATP-binding; RNA-binding; Helicase. NP_BIND 90 97 ATP (POTENTIAL). SITE 196 199 DEAD BOX.
  48; Indels
   872ECAFC106E110A CRC64;
   83 RMLKALCSOKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYR 125
   DB 1;
   31, Created)
31, Last sequence update)
38, Last annotation update)
   10.9%; Score 71.5; DE 24.3%; Pred. No. 8.1; tive 25; Mismatches
  207 AA.
  Pfam; PF00270; DEAD; 1.
Pfam; PF00271; helicase_C; 1.
PROSITE; PS00039; DEAD_ATP_HELICASE; 1.
  PRT;
   PubMed-8175896;
  Macaca mulatta (Rhesus macaque).
   54026 MW;
  EMBL; Z54285; CAA91073.1; -.
InterPro; IPR000629; -.
InterPro; IPR001410; -.
   EMBL; M97756; AAA19937.1; -.
   Query Match
Best Local Similarity 24.3%
Matches 25; Conservative
  STANDARD;
  Cercopithecinae; Macaca.
NCBI_TaxID=9544;
   IPR001650; -
  481 AA;
   SEQUENCE FROM N.A. MEDLINE-94230585; 1
   01-FEB-1995 (Rel.
01-FEB-1995 (Rel.
15-JUL-1999 (Rel.
  HISTONE HIT
  HIFT OR HIT
   H1T_MACMU
P40286;
   InterPro;
   SEQUENCE
   RESULT 13
H1T_MACMU
  Db
ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
   ŝ
   "The rIIA gene of bacteriophage T4. I. Its DNA sequence and discovery of a new open reading frame between genes 60 and rIIA."; Genetics 125:237-248(1990).
   Gaps
HSSP; PO8287; 1GHC.
InterPro: IPR001386; -.
Pfam; PF00538; linker histone; 1.
Chromosomal protein; Nuclear protein; DNA-binding; Multigene family;
   16 GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75
  PARTS OF THE REPLICATION COMPLEX AND HAS DNA-BINDING PROPERTIES, SUBCELLULAR LOCATION: ON THE INNER MEMBRANE OF THE HOST SHORTLY
   76 SAIQRTQRMLKALCSQKPAAGISSERSRD-TKIEVIQLV-KNLLTYVRGVYRHGNFR 130
   30 GLTSASRKAPNLSVSKLITEALSVSQER------VGMSLAALK-----
  MEDLINE-82078066; PubMed-6273585;
Pribnow D., Sigurdson D.C., Gold L., Singer B.S., Napoli C.,
Brosius J., Dull T.J., Noller H.F.;
FIT cistrons of bacteriophage T4. DNA sequence around the
intercistronic divide and positions of genetic landmarks.";
J. Mol. Biol. 149:337-376(1981).
-:- FUNCTION: TRANSCRIBED PRIOR TO REPLICATION. THIS PROTEIN FORM
   "Modulation of mutation rates in bacteriophage T4 by a base-pair change a dozen nucleotides removed.";
J. Mol. Biol. 176:239-249(1984).
  Bacteriophage T4.
Viruses; dSDNA viruses, no RNA stage; Tailed phages; Myoviridae;
T4-like phages.
   39;
  Query Match 10.7%; Score 70.5; DB 1; Length 207; Best Local Similarity 25.6%; Pred. No. 3.8; Matches 30; Conservative 17; Mismatches 31; Indels 3
  ; Testis.
BY SIMILARITY.
ACETYLATION (BY SIMILARITY).
  8812112C83727705 CRC64;
  Last sequence update)
Last annotation update)
  ; Pred. No. 3.8; 17; Mismatches
  GLOBULAR
  PRT;
  SEQUENCE FROM N.A. MEDLINE=90337270; PubMed=2379817;
   SEQUENCE OF 476-725 FROM N.A. MEDLINE-84267841; PubMed-6748077;
  01, Created)
  Acetylation; Spermatogenesis;
  21962 MW;
  SEQUENCE OF 587-725 FROM N.A.
   EMBL; X52686; CAA36911.1; -.
  STANDARD:
  112
   Sugino A., Drake J.W.;
   Daegelen P., Brody E.;
  (Rel. 22, (Rel. 40,
  AFTER INFECTION.
  207 AA;
  21-JUL-1986 (Rel.
  01-MAY-1992 (Rel. 01-OCT-2000 (Rel.
  NCBI_TaxID=10665;
  PROTEIN.
   VR2A_BPT4
P03690;
  INIT_MET
MOD_RES
  SEQUENCE
  DOMAIN
   29
```

```
망
  Ş
   В
  Š
  DR KW FTT FTT SO
   Query Match
Best Local S
Matches 27
Query Match
Best Local Similarity
Matches 15; Conserv
   Early protein; DNA-IREPEAT 101
REPEAT 481
DNA_BIND 544
CONFLICT 616
SEQUENCE 725 AA;
  SALTY
FLHC_SALTY
   O52222;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
FLAGELLAR TRANSCRIPTIONAL ACTIVATOR FLHC.
   EMBL; AF029300; AAB96640.1; -. EMBL; D43640; BAA85315.1; -. StyGene; SG10643; flhC.
  Yanagihara S., Iyoda S., Ohnishi K., Iino T., Kutsukake K.;
"Structure and transcriptional control of the flagellar master operon of Salmonella typhimutium.",
Genes Genet. Syst. 74:105-111(1999).
-i- FUNCTION: TRANSCRIPTIONAL ACTIVATOR. TOGETHER WITH FLHD IT ACTS AS A COMPOUND SIGMA FACTOR THAT ACTIVATE CLASS 2 FLAGELLAR GENES (BY
   Transcription regulation; Sigma DNA-binding; Flagella. SEQUENCE 192 AA; 21579 MW; C
   or send an email to license@isb-sib.ch).
  use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
  the European Bioinformatics Institute.
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
   SEQUENCE FROM N.A. PubMed=10586519;
  Toguchi A., Harshey R.M.; Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
  STRAIN-LT2;
   SEQUENCE FROM N.A.
  Salmonella
   Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
  Salmonella typhimurium
   PIR; A04304; Z2BPA4.
PIR; JU0400; JU0400.
   NCBI_TaxID=602;
   396
   342 TTKNLSYKKMQSMFEPDSKLCNAGVVYEVNLD-----PRLKRIKQSHETSAVASSYRLF- 395
  87 ALCSQKPAAGISSERSRDTKIE-VIQLVKNLLTYVRGVYR 125
   28 TLKEL-IEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLK 86
   Local Similarity 27.0 nes 27; Conservative
   -----GINT----TKINIVIDNIKNRVNIVRGLAR 421
  Conservative
  DNA-binding;
  STANDARD;
   179
559
570
616
             10.6%;
   10.6%;
  82893 MW;
  20;
   DNA replication; Inner membrane; Repeat
APPROXIMATE.
  7;
   Score 70; DB
Pred. No. 18;
20; Mismatches
             Score 69.5; D
Pred. No. 4.4;
   APPROXIMATE.
H-T-H MOTIF (BY SIMILARITY).
D >> H (IN REF. 2).
; 2290FE341BB45416 CRC64;
   PRT;
  C7334C691ECE3F8D CRC64;
 Mismatches
   factor; DNA-directed RNA polymerase;
  192 AA
  DB 1;
18;
  There are no restrictions
                           DB 1;
 21;
   31;
  Length 725
                          Length 192;
 Indels
   Indels
   22;
 ω,
Gaps
   Gaps
  on
   5
```

Search completed: May 14, 2001, 06:02:08 Job time: 43365 sec

ţ

| ユ        |
|----------|
| $\simeq$ |
| 200      |
| CA       |
| ٠.       |
| 42       |
| 4        |
|          |
| 28       |
| CA       |
| ••       |
| 0        |
| -        |
|          |
| 4        |
| -        |
| بخ       |
| Мау      |
|          |
| ဌ        |
| lon      |
| ~        |

| 018412 018412 098161 098161 098161 09161 091710 091110 0993A1  | 71 10.8 589 5 096661<br>70.5 10.7 150 14 098780 | 70.5 10.7 150 14<br>70.5 10.7 150 14<br>70.5 10.7 264 1<br>70.5 10.7 1026 10                                      | 70.5 10.7 1449 5 QSN337<br>70.5 10.7 1811 14 Q36184<br>70 10.6 425 4 Q95810<br>70 10.6 474 2 Q9RACI  | 70 10.6 475 2 Q9RAC2<br>70 10.6 475 2 Q9RAC0<br>70 10.6 475 2 Q9RAB9 | 70 10.6 482 9 036165<br>70 10.6 513 2 068559 | 70 10.6 516 2 053242<br>70 10.6 540 5 09W025              | 70 10.6 1063 5 Q9VWZ7 Q9vw17 drosophila                       | 69.5 10.6 274 14 Q89048 Q8904<br>69.5 10.6 980 11 P97837 P9783                  | ALIGNMENTS . RESULT 1 | 0N60 | Q9N0W9;<br>01-OCT-2000<br>01-OCT-2000 |                                                                                                  | RA SEQUENCE FROM N.A. RA Yang S., Boroughs K.L., McDermott M.J.; RT "Canine Interleukin-13: Molecular Cloning of Full-Length cDNA and RT Expression of Biologically Active Recombinant Protein."; | Submitted (MAR-2000) to the EMB<br>EMBL: AF244915; AAF63204.1; | SEQUENCE 131 AA; 14208 MW; 9A14ZB4DUF8U3/UF CRC64;       | Query Match 98.4%; Score 647.5; DB 6; Length 131; Best Local Similarity 99.2%; Pred. No. 3.8e-60; Matches 130; Conservative 0; Mismatches 0; Indels 1; Gaps 1; | OY 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60                                                                         | QY 61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTY 119                                             | OY 120 VRGVYRHGNFR 130<br>                                                                                   | SULT 2<br>TV84<br>Q9TV84 PRELI                                                     |
|----------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------|------|---------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| GenCore version 4.5<br>Copyright (c) 1993 - 2000 Compugen Ltd. | OM protein - protein search, using sw model     | Run on: May 14, 2001, 06:01:11 ; Search time 133.94 Seconds (without alignments) 113.760 Million cell updates/sec | Title: US-09-451-527-100 Perfect score: 658 Sequence: 1 MALWITVVIALTCLGGLASPQLVKNLLTYVRGVYRHGNFR 130 | Scoring table: BLOSUM62<br>Gapop 10.0 , Gapext 0.5                   | Searched: 374700 seqs, 117207915 residues    | Total number of hits satisfying chosen parameters: 374700 | Minimum DB seq length: 0<br>Maximum DB seq length: 2000000000 | Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries | S                     |      |                                       | <br><br><pre>11: sp_rodent:* 12: sp_unclassified:* 13: sp_vertebrate:* 14: cp_vertebrate:*</pre> | ved .                                                                                                                                                                                             | SUMMARIES                                                      | Result Query<br>No. Score Match Length DB ID Description | 647.5 98.4 131 6 Q9N0W9 Q9n0W9 Q9n0W9 383 58.2 114 6 Q9TV84 Q9TV84                                                                                             | 79 12.0 1183 4 094918 094918 hom 79 12.0 1230 4 094917 099017 hom 79 12.0 1230 1 099017 099017 hom 70 12 12 12 12 12 12 12 12 12 12 12 12 12 | 8 78.5 11.9 1448 5 090949 090949 try 9 76.5 11.6 1448 5 090946 090946 try 0 74 11.2 336 10 095MD4 095MD4 095md4 ly | 73.5 11.2 415 8 QMUM4<br>2 73.5 11.2 607 10 Q9S143<br>3 73.5 11.2 649 14 010619<br>4 73.5 11.2 1806 5 045657 | 150 14 Q98779<br>438 10 Q9M3H8<br>1763 11 Q9JKX5<br>5038 4 Q9MPK1<br>150 14 Q98791 |

```
RESULT
Q9UDC7
AC QQ
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 00
DT 0
  RESULT
Q28609
ID Q2
  Š
  В
  밁
  Š
  밁
   Qy
  Query Match
Best Local
  Matches
  Query
Best L
   Matches
Q28609
  Q9TV84;
01-MAY-2000 (
01-MAY-2000 (
01-OCT-2000
  009a
   U1-MAY-2000 (TrEMBLIGE1 13, Last see 01-OCT-2000 (TrEMBLIGE1 15, Last an INTERLEUKIN-13 PRECURSOR (FRAGMENT) IL-13.
  Morgan J.G., Dolganov G.M., Robbins S.E., "The selective isolation of novel cDNAs en surrounding the human interleukin 4 and 5 Nucleic Acids Res. 20:5173-5179(1992).

HSSP; P35225; 3ITR.

SEQUENCE 49 AA; 5109 MW; 679CD23A190C7
   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
   01-MAY-2000
01-MAY-2000
  Q9UDC7
   Eukaryota; Metazoa; Chordata; Crania
Mammalia; Eutheria; Cetartiodactyla;
Bovidae; Bovinae; Bos.
   SEQUENCE FROM N.A. MEDIINE=93027259; PubMed=1408833;
  NCBI_TaxID=9606;
   Q9UDC7;
   SEQUENCE FROM N.A.
  NCBI_TaxID=9913;
  61
  60
  Local
  -
  \vdash
   Match
   MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCN 48
  taurus (Bovine).
   GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAA-GISSERSRDTKIEVIQ 111
   MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
  MALLLTTVIALACLGGFDSPGPVPPSTALRELIEELSNITQTQKAPLCN
  HOMOLOG.
  MALLLTAVIVLICEGGLTSPSPVPSATALKELIEELVNITQNQKVPLCNGSMVWSLNLTS
  SMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSEYVRDTKIEVAQ
  l Similarity
35; Conserv
   ; 08
  Similarity
  114 AA;
  (TrEMBLrel.
   (TrEMBLrel.
  PRELIMINARY;
  Conservative
  PRELIMINARY;
   Conservative
   114
  12355 MW;
  23.9%;
  58.2%;
70.8%;
  13,
15,
  13,
13,
   10;
   Score 157.5;
Pred. No. 1.9e
1; Mismatches
  Last
Last
  Created)
  Last sequence update)
Last annotation updat
  Created)
   Score 383; DB 6;
Pred. No. 1.4e-32;
0; Mismatches 21
  679CD23A190C778E CRC64;
  Craniata; Vertebrata; ʁuteɹeosɹomɹ;
actyla; Ruminantia; Pecora; Bovoidea;
   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
  PRT;
  PRT;
  D8CC56E5627D030A CRC64;
  sequence update) annotation updat
  275
  49
  1.9e-09;
   E., Hinton
encoded k
5 genes."
  Ā
  AA
   BB
  update)
  12;
   21;
   4
   Length
  L.M.,
by the
  Indels
   Length 49;
   Indels
  49
   regions
  Lovett M.;
   1;
   2
   Gaps
   Gaps
  60
   1;
```

```
RESULT
094918
   В
  Š
  В
   20
  Query.Match
Best Local S
Matches 24
Query Match
Best Local (
   094918;
094918;
01-MAY-1999;
01-MAY-1999;
01-MAY-2000;
  NON_TER
   Homo sapiens (Human).
Homo sapiens (Human).
'arvota; Metazoa; Chordata;
'haria; Primates;
   U1-MAY-1999 (TrEMBLrel. 10,
01-MAY-1999 (TrEMBLrel. 10,
01-MAY-2000 (TrEMBLrel. 13,
KIAAA0829 PROTEIN (FRAGMENT).
  Signal.
SIGNAL
  Migase T., Ishikawa K., Suyama M., Kikuno R., Hirosawa M., Miyajima N., Tanaka A., Kotani H., Nomura N., Ohara O.; "Prediction of the coding sequences of unidentified human genes. The complete sequences of 100 new cDNA clones from brain which cofor large proteins in vitro."; DNA Res. 5.355-364(1998).

DNA Res. 5.355-364(1998).
   CHAIN
  Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata;
  Q28609;
01:NOV-1996 (TrEMBLrel. 01, Created)
01:NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-CCT-2000 (TrEMBLrel. 15, Last annotation updat
PUTATIVE PREPROSPERMINGEN PRECURSOR.
  MEDLINE=99156230; PubMed=10048485;
   NCBI_TaxID=9606;
   PFAM; PF00089; trypsin; 1.
PROSITE; PS00134; TRYPSIN_HIS; UNKNOWN_1.
  "Cloning and sequencing of cDNAs preproacrosin-related cDNA.";
   SEQUENCE FROM N.A.
STRAIN=NEW ZEALAND WHITE;
  NCBI_TaxID=9986;
   Eukaryota; Metazoa;
Mammalia; Eutheria;
   SEQUENCE FROM N.A.
  SEQUENCE
  EMBL; U05203; AAA61629.1;
   Richardson
   MEDLINE=94368861; PubMed=8086468;
   INTERPRO;
  Biochim. Biophys. Acta 1219:215-218(1994).
   227
  172
  ISSUE=BRAIN;
   67
   10
  ഗ
  PS-GKIDTCORLOQLVEVLK 245
  ESLINVSDCSAIQRTQRMLK
  AQTCYVAGWGYVKENAPRPSPTLMEARVDLINL-----ELCNSTQWYNGRITASNLCAGY 226
   ALTCL---GGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAAL
   P00734; 2HNT
   Similarity 30.(
24; Conservative
  IPR001254; -.
  1183
   1
17
275 .
  R.T., O'Rand M.G.;
   (TrEMBLrel.
   PRELIMINARY;
  AΑ;
  AΑ;
   16
275
29965
   Lagomorpha; Leporidae;
   12.5%;
12.0%;
  130962 MW;
   86
  MW;
   TISSUE-TESTIS;
  12;
  Last sequence update)
Last annotation update)
  Created)
   Score 82.5; D
Pred. No. 0.88
L2; Mismatches
Score
Pred.
   PROSPERMINOGEN
  POTENTIAL
   Craniata; Vo
Catarrhini;
   8FC2467414069C61 CRC64
  1FE0EE56C0DFFE3A CRC64;
  for rabbit preproacrosin
79;
No.
   1183
   Vertebrata;
  Vertebrata; Euteleostomi;
           DВ
  . 88;
   ΑA
  Hominidae;
   DB
           4;
   Oryctolagus
   update)
  6,
  35;
          Length 1183;
   Length
   Euteleostomi;
   275;
  9;
  a novel
  code
   Gaps
   66
  ω
```

Matches

Similarity

Conservative

19;

Mismatches

Indels

16;

Çī

4

```
Tamura T.;
  Q9N946
Q9N946;
   09N949;
   Q9N949
   œ
   σ
  607
  RESULT
Q9N949
   RESULT
   09N946
 a
  Ω
   Dp
  ŏ
  ò
   g
   δ
  q
   ò
   5,
   56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQL 112
            NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQL 112
  626 LTTVKALTLIAG--SPLKIDLRPVLGEGVPILASFLRKNQRALKLGTLSALDILIKNYSD 683
  684 SLTAAMIDAVLDELPPLISESDMHVSQMAISFLTTLAKVYPSS--LSKISGSILNELIGL 741
   Rattus norvegicus (Rat).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia: Butherla; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID=10116;
  637 SLTAAMIDAVLDELPPLISESDMHVSQMAISFLTTLAKVYPSS--LSKISGSILNELIGL 694
   LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV-----WSV 55
  ς:
LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV------WSV
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
  s'
   16;
  Huang
  χn
   Ren S., Shi J., Huang C., Jiang C., Li Y., Zhou J., Yu Y., Xwang Y., Eu G., Chen Z., Han Z.;
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ databases.
EmBL; AF157326; AAF67492.1:
SEQUENCE 1230 AA; 136360 MW; A3ACF0E99B99A1D7 CRC64;
   12.0%; Score 79; DB 4; Length 1230; 31.2%; Pred. No. 11; tive 19; Mismatches 51; Indels
  Ċ.,
  SEQUENCE FROM N.A.

TISSUE-ADBENAL GLAND;
Fu S., Li Y., Wu T., Peng Y., Gu Y., Zhang L., Jiang C.,
Han Z., Fu G., Wang Y.,
A novel gene expressed in the human adrenal gland.";
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
   Created)
Last sequence update)
Last annotation update)
   Last sequence update)
Last annotation update)
  PRT; 1230 AA
  PRT; 1230 AA
   Created)
   O1-OCT-2000 (TrEMBLrel. 15, C 01-OCT-2000 (TrEMBLrel. 15, Li 01-OCT-2000 (TrEMBLrel. 15, La TIP120 PROTEIN.
  (TrEMBLrel. 03, (TrEMBLrel. 03, (TrEMBLrel. 13,
  Conservative
  PRELIMINARY;
  PRELIMINARY;
  SEQUENCE FROM N.A.
TISSUE-ADRENAL GLAND;
   Homo sapiens (Human)
   Query Match
Best Local Similarity
Matches 39; Conserv
   1:: 1
742 VRSPL 746
   113 VKNLL 117
   | :: |
695 VRSPL 699
   113 VKNLL 117
  01-MAY-1997
01-MAY-2000
   01-MAY-1997
   P97536
P97536;
  TIP120.
  TIP120.
  09P0H7
  ø
വ
   99
   ഹ
   RESULT
Q9P0H7
  RESULT
   P97536
   õ
   ò
   g
   õ
   g
  g
   ò
  g
  ò
  q
```

```
56 NLTAGMYCAALES---LINVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQL 112
  557 CLGNL------PQLKMLDLSGTN-TDNESLRSLCLSQTVVSLNLSHCWKMTNVSHIS 606
  Gaps
   CHRI 17.
Trypanosoma brucei.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
  13 CLGGLASPSPVTPSPTLKELIEELVNITQNQA--SLCNGSMVWSVNL-----TAGMYCA 64
  FIRAIN-TREUG27;
Hall N., Bowman S., Quail M., Ivens A.C., Kay M.P., Bray-Allen S., Lenlard N.J., Clark L.N., Harris B.R., Melville S., Lawson D., Lennard N.J., Clark L.N., Harris B.R., Melville S., Lawson D., Gerrard C., Rajandream M.A., Barrell B.G.; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AL359782; CAB95328.1; -. SEQUENCE 1448 AA; 160264 MW; 94F4F8DB3211778A CRC64;
   5 LTVVIALTCLGGLASPSPVTPSPTLKELIEELVN-ITQNQASLCNGSMV------WSV
  65 ALESL -- INVSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLT 118
   "Molecular cloning of a novel 120-kDa TBP-interacting protein.";
Biochem. Biophys. Res. Commun. 229:612-617(1996).
EMBL; D87671; BAA13432.1; -.
SEQUENCE 1230 AA; 136360 MW; A3ACFOR99R94A1D7 PRYAA.
  16;
SEQUENCE FROM N.A.
MEDLINE-97127450; pubMed-8954946;
Yogosawa S., Makino Y., Yoshida T., Kishimoto T., Muramatsu M.,
  21;
  SIEALNELNLSNCFGINAGWEALEKL-QQLHVAILSNTHITDRDISHFSNCKNLIT
  11.9%; Score 78.5; DB 5; Length 1448; 31.9%; Pred. No. 15; tive 14; Mismatches 44; Indels 21
  Length 1230;
  Query Match 12.0%; Score 79; DB 11; Length 12 Best Local Similarity 31.2%; Pred. No. 11; Matches 39; Conservative 19; Mismatches 51; Indels
   01-OCT_2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
POSSIBLE PUTATIVE ADENYLATE CYCLASE REGULATORY PROTEIN.
CHR1.19.
   01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
POSSIBLE PUTATIVE ADENYLATE CYCLASE REGULATORY PROTEIN
  1448 AA.
   1448 AA.
   PRT;
   PRT;
  Conservative
   PRELIMINARY;
  PRELIMINARY;
  Ouery Match
Best Local Similarity
Matches 37; Conserv
   SEQUENCE FROM N.A.
  NCBI_TaxID=5691;
   1:: 1
742 VRSPL 746
  113 VKNLL 117
```

```
β
                       ş
  엉
   õ
   В
   Š
  ş
  ş
  а
  밁
  믕
  ô
  SQ RAA
   Matches
   Query Match
   Best
   Matches
  Query Match
Best Local
   Kvarnheden A., Yao J.L., O'Brien I.
"Differential expression of three Diset and development";
Submitted (NOV-1997) to the EMBL/GerEMBL; AJ002590; CAB60838.1;
INTERPRO; IPRO00553;
PFAM; PF00134; Cyclin; 1.
SEQUENCE 336 AA; 38687 MW; 5BBA
   Q9SMD4
   Hall N., Bowman S., Quail M., Ivens A.C., Kay M.P., Bray Lennard N.J., Clark L.N., Harris B.R., Melville S., Laws Gerrard C., Rajandream M.A., Barrell B.G.; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AL359782; CAB95333.1;
   Eukaryota; Viridiplantae; Embryophyta; Magnoliophyta; eudicotyledons; core eucolanales; Solanaceae; Solanum.
   CYCD3,3 PROTEIN. CYCD3,3.
   01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2000 (TrEMBLrel. 14,
  STRAIN-CV.
   SEQUENCE FROM N.A.
  STRAIN-TREU927; Hall N., Bowman
   NCBI_TaxID=4081;
   Lycopersicon esculentum (Tomato).
  SEQUENCE
   SEQUENCE FROM N.A.
   NCBI_TaxID=5691;
  Trypanosoma brucei.
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma
  125
  116
244 EKPCIG---EKYQDQLLGILGIVKE---
  659
   607
   184
                          91
   57
   Local
   65
  13 CLGGLASPSPVTPSPTLKELIEELVNITQNQA--SLCNGSMVWSVNL-----TAGMYCA 64
   4 WLTVVIALTCLGGLASPSPVTPSPTLKEL-IEEL-----VNITQNQASLCNGSMVWSVN- 56
                         QKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYR 125
   WMNQLVAVTCL-SLAAKVEETDVPLLLDLQVEESGFLFESKTIQRMEMLILSTLKWKMNP 183
  I'VI
  LLT 118
  SLEALNELNLSNCIRINAGWEAIEKLQQLHVAI-----LSNTHITDRDISHFSKCKN
  ALESL--INVSDC-----SATORTORMLKALCSOKPAAGISSERSRDTKIEVIOLVKN 115
  CLGNL------PQLKMLDLSGTN-TDNESLRSLCLSQTVVSLNLSHCWKMTNVSHIS
   VTPFSFLDFITRRLGLKHCLSLEFLRRCEKVLLYTITDDRFIGYLPSAMASATMLHVLDR 243
   l Similarity
37; Conser
  Similarity
  661
  UC82B;
  1448 AA;
   ---LTAGM---YCAALE-----SLINVSD---
   Conservative
   PRELIMINARY;
   Conservative
   11.2%;
23.9%;
  11.6%;
29.3%;
  160479 MW;
   24;
   18;
   Created)
Last sequence update)
Last annotation updat
   EMBL/GenBank/DDBJ databases
   Score 74; DB
Pred. No. 8.5;
  Score
  Pred. No.
   PRT;
  5BBA8F6DD0852031 CRC64;
  Mismatches
   Mismatches
  e D3
 KVEGCYR
   688B26228AD2046B CRC64;
  76.5;
   ta; Tracheophyta; Spermatophyta;
eudicots; Asteridae; euasterids
   Morris B.;
cyclin genes during
   336
   24;
  DB 10;
   ξ
   В
   update)
  54;
  5;
   34; Indels
  ---CSAIQRTQRMLKALCS 90
   Length 336;
   Length 1448;
  Indels
   Bray-Allen
Lawson D.,
  euasterids
  tomato
  40;
   35;
  S
   Gaps
   Gaps
  fruit
  658
  606
  9
   7;
```

```
Ş
  Вþ
   Š
   밁
   Query Match
Best Local
   Matches
   Q9SI43;
Q9SI43;
Q1-MAY-2000
Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D., Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V., Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S., Cronin L.A., Shen M., Vanaken S.E., Umayam L., Tallon L.J., Gill J.E., Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R., Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A., Salzberg S.L., Fraser C.M., Venter J.C.; Salzberg S.L., Fraser C.M., Venter J.C.; Nature 402:761-768(1999).

"Sequence and analysis of chromosome II of Arabidopsis thaliana."; Nature 402:761-768(1999).

EMBL; AC007197; AnD25855.1; -.
   STRAIN-CV.
  SEQUENCE FROM N.A.
   Eukaryota; Viridiplantae; Embryophyta; Trache Magnoliophyta; eudicotyledons; core eudicots;
   Arabidopsis thaliana (Mouse-ear cress).
   01-MAY-2000 (TrEMBLrel. 13, Careated)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-CT-2000 (TrEMBLrel. 15, Last annotation update)
PUTATIVE METHYLMALONATE SEMI-ALDEHYDE DEHYDROGENASE.
   Lemieux C., Otis C., Turmel Submitted (JUL-1999) to the EMBL; AF166114; AAF43874.1;
  O9MUM4;
01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
  Q9MUM4
  NCBI_TaxID=3702;
   Brassicales; Brassicaceae; Arabidopsis.
   SEQUENCE
  Chloroplast
   Lemieux C., Otis C., Turmel M., "Ancestral chloroplast genome in Mesostigma viride
   SEQUENCE FROM N.A. MEDLINE=20150907;
  Chlorodendrales;
NCBI_TaxID=41882;
  PUTATIVE PLASTID DIVISION PROTEIN.
  branch of green plant evolution."; Nature 403:649-652(2000).
   Eukaryota; Viridiplantae;
   Chloroplast
  Mesostigma
   SEQUENCE FROM N.A.
   247
  188
   36
  89
   LVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAI------QRTQRMLKAL
   LIQPNLSTASLC-GAIIWLVALTAGIHWFYLNSILSIGAVTALISLGSQEYQRQRIISFL
   CSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRG
  -NPWANPTSIG-----YQLVQSLLAVGSG
   Similarity
   COLUMBIA;
   415
   viride
   Conservative
  PRELIMINARY;
  PRELIMINARY;
  AA;
   Mesostigmataceae;
  PubMed=10688199;
  46813 MW;
   11.2%;
28.7%;
   Chlorophyta; Prasinophyceae;
   19;
   M.;
EMBL/GenBank/DDBJ
   Score 73.5;
Pred. No. 12;
  PRT;
  PRT;
   E35116E9692EC782
  Mismatches
   Mesostigma
  607
  415
   Tracheophyta; Spermatophyta; dicots; Rosidae; eurosids II;
  122
   269
   A
  DB
   update)
  8;
  29;
   databases
   CRC64
  Length
  Indels
  reveals
  415;
  19;
  an
  early
  Gaps
   246
   88
  4;
```

.

```
K04B12.1 PROTEIN.
   01-FEB-1997
01-FEB-1997
  ن
ن
  SECUENCE
  Query Match
  Steward
   098779
                              K04B12
  RESULT 15
098779
   ò
   qq
  δ
   4;
  3;
   Cowan P., Bulach D., Goodge K., Robertson A., Tribe D.E.; "Nucleotide sequence of the polyhedrin gene region of Helicoverpa zea single nucleocapsid nuclear polyhedrosis virus: placement of the virus in lepidopteran nuclear polyhedrosis virus group II."; J. Gen. Virol. 75:3211-3218(1994).
   59 AGMYCAALESLINVSDCSA----IQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLV 113
   102 SPQRITPRSERSENVIESLPESLSSLKQVTVSLRRGS------GLYGKNIQNLKENY 152
  Gaps
   Gaps
   SPSPVTP----SPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLIN-- 71
   17;
   23;
   Length 607;
   Le T.H., Wu T., Robertson A., Bulach D., Cowan P., Goodge K.,
   Length 649;
   Indels
   Indels
   Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases
  PFAM; PF00171; aldedh; 1.
PROSITE; PS00070; ALDEHYDE_DEHYDR_CYS; UNKNOWN_1.
PROSITE; PS00225; CRYSTALLIN_BETAGAMA; UNKNOWN_1.
SEQUENCE 607 AA; CR5926 MW; 0257A3606B31165C CRC64;
  100.1; -.
75522 MW; BOD133AC9FEBD0E4 CRC64;
  Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
  72 -----VSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTK 106
   153 EKTMDPYESDSSSLELTPKPKKKSNTEKKIAGVGEKRSKKEK 194
  Last sequence update)
Last annotation update)
  Last sequence update)
Last annotation update)
  DB 14;
  35;
   31;
   DB 10;
   649 AA.
  11.2%; Score 73.5; DE
25.5%; Pred. No. 20;
:ive 18; Mismatches
   PRT; 1806 AA.
   16; Mismatches
  11.2%; Score 73.5; 1
26.4%; Pred. No. 19;
  Helicoverpa zea nuclear polyhedrosis virus
  114 KN-----LLTYVRGV----YRHGNF 129
  446 QSGVDDGAKLLLDGRDIVVPGYEKGNF 472
   Created)
   Created)
   PRT;
   MEDLINE=95053907; PubMed=7964631;
   04,
04,
08,
   01-JUN-1998 (TrEMBLrel. 06, 01-JUN-1998 (TrEMBLrel. 06, 01-MAY-2000 (TrEMBLrel. 13,
   IMMEDIATE EARLY PROTEIN 1.
   Query Match
Best Local Similarity 25.5%
Matches 26; Conservative
   Ouery Match
Best Local Similarity 26.4%
Matches 23; Conservative
   PRELIMINARY;
   PRELIMINARY;
  01-JUL-1997 (TrEMBLrel.
01-JUL-1997 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
IPR001064; -.
   U67264; AAB54100
   Nucleopolyhedrovirus.
NCBI_TaxID=10468;
  STRAIN-ELKAR (ELCAR);
                            IPR002086;
  649 AA;
  SEQUENCE FROM N.A.
   O10619; Q82480;
01-JUL-1997 (Tr
  INTERPRO;
                            INTERPRO;
   REVISIONS
  SEQUENCE
  045657
  010619
  19
  RESULT 14
   RESULT
010619
   045657
ID 0
AC 0
DT 0
DT 0
  DR DR DR DR DR DR DR DR DR
  g
   d
  ò
   ACC DOTAL PROPERTY REPAIR REPA
   ò
   g
  ò
```

```
Wilson R., Alnscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hiller L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latrellle P.,
Jones M., Kershaw J., Kirsten J., Laister N., Latrellle P.,
Bightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.,
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
"2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
   626 SCMSSEYNCAWCSGLHKCSNSCGALEKSKACVKIQPMRLPIA-IGSQQ-----EIVLEA 678
  575 ANWITT -----GVSCPSEIFTSPNTFEIL - LLTSISNNPISRHNFTVYDCSGYGTCS 625
  55 VNLTAGMYCAALESLINVSD-CSAIQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLV 113
  Gaps
                                Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
  2 ALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASL-----CNGSMVWS
  27;
   Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
INTERPRO; IPRO00224; -..
   Length 1806;
   Indels
   Viruses; ssRNA negative-strand viruses; Mononegavirales;
Rhabdoviridae; Vesiculovirus.
  DB2F3085B6BB28AD CRC64;
  Submitted (DEC-1996) to the EMBL/GenBank/DDBJ databases
   Last sequence update)
Last annotation update)
  50;
   5,
  11.2%; Score 73.5; DB 25.7%; Pred. No. 64; ive 24; Mismatches
  150 AA.
   Created)
  PRT;
   SEQUENCE FROM N.A. MEDLINE=94150718; PubMed=7906398;
  MEDLINE=97075113; PubMed=8917539;
   PFAM; PF01437; Plexin_repeat; 3. PFAM; PF01833; TIG; 3.
  1806 AA; 200429 MW;
  (TrEMBLrel. 02,
   (TrEMBLrel. 02, (TrEMBLrel. 13,
   Vesicular stomatitis virus.
  01-MAY-2000 (TrEMBLrel. 13 PHOSPHOPROTEIN (FRAGMENT).
   elegans.";
Nature 368:32-38(1994).
BMBL; Z83232; CAB05755.1;
INTERPRO: IPR002165; -:
INTERPRO: IPR002909; -:
   Best Local Similarity 25.79
Matches 35; Conservative
   114 KNLLTYVRGVYRHGNF 129
   PRELIMINARY;
Caenorhabditis elegans.
   679 SNLDTLDR---RHEHF
  SEQUENCE FROM N.A.
   SEQUENCE FROM N.A.
  NCBI_TaxID=11276;
   NCBI_TaxID=6239;
   STRAIN=0888CRB;
```

7;

```
ş
       В
  Query Match 11.0%; Score 72.5; DB 14; Length 150; Best Local Similarity 24.2%; Pred. No. 4.9; Matches 29; Conservative 20; Mismatches 40; Indels 31; Gaps
  PFAM; PF00922; Phosphoprotein; 1.

NON_TER 1 1 1

NON_TER 150 150
SEQUENCE 150 AA; 16711 MW; 16D11C4EBEBA65E7 CRC64;
63 CAALESLINVSDCSATORTORMLKALCSQKPAAGISSERSR------DTKIEVIQLV 113
  6;
```

Search completed: May 14, 2001, 06:01:15 Job time: 43958 sec

Arabidopsis thalia Arabidopsis thalia

P600. Mus heparin-bind Ryanodinė receptor Wheat sulfite redu Rianodin receptor.

Human interleukin

Rice sulfite reduc Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia

Z. mobilis alcohol
A. thaliana EL3 pr
Human secreted pro
Baculovirus RNA ba
RNA baculovirus ph
Porcine heparin-bi

sed

Minimum DB Maximum DB

Database :

Scoring table:

Searched:

Perfect score:

Run on:

Sequence:

Arabidopsis thalia Arabidopsis thalia Arabidopsis thalia Human ORFX ORF2673 Human brain PARP2

Human myosin IXa. Flax rust resistan

```
Interleukin-13; IL-13; antibody; canine; inhibitor; immune response; immunoregulation; tumour; cancer; autoimmune disease; vaccine.
   Nucleic acids encoding immunoregulatory proteins from cats or dogs, useful for treating or preventing e.g. tumors or autoimmune disease
   Canine mature interleukin-13 (IL-13) clone 78,
  RS;
   ALIGNMENTS
  Wonderling
  R10834
Y49702
Y58996
G31561
G31550
G31559
G55503
G55503
G55501
G41796
G41794
R28450
R28450
   W07698
W80730
W93458
B35513
B35516
B35516
V05781
C06263
G51250
G51250
R92795
Y21548
R11510
G06262
G06261
  Y58998
  Y58224 standard; Protein; 110 AA.
 99WO-US11942.
   98US-0087306
   Yang S, Dreitz MJ,
  (first entry)
 N-PSDB; Z55565, Z55566.
   WPI; 2000-072623/06
   (HESK-) HESKA CORP.
  111.7
111.7
111.7
111.5
111.5
111.5
111.5
   Canis familiaris.
   WO9961618-A2
  28-MAY-1999;
  29-MAY-1998;
   14-MAR-2000
  02-DEC-1999.
 6033.5
6033.5
6033.5
6033.5
6033.5
6033.5
6033.5
  Y58224;
  Sim G,
 RESULT
   158224
  Sequence of human
Protein with cytok
Cytokine NC30. R
Sequence of mouse
  Canine interleukin
Canine mature inte
Canine interleukin
  Protein with cytok
Human interleukin-
  Canine mature inte
   Human interleukin-
   May 13, 2001, 17:47:36 ; Search time 79.9 Seconds (without alignments) 78.698 Million cell updates/sec
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   US-09-451-527-105
556
1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTVVRGVYRHGNFR 110
  Description
  (cgn1_8/gcgdata/geneseq/geneseqp/AA1982.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1982.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1984.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1985.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1985.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1980.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1980.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1980.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1990.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1997.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1997.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1997.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1997.DAT:
(cgn1_8/gcgdata/geneseq/geneseqp/AA1999.DAT:
(cgn1_8/gcgdata/genes
   /cgn1_8/gcgdata/geneseg/genesegp/AA2001.DAT:*
   A_Geneseq_0401:*
: /cgn1_8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
: /cgn1_8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
   390729
             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
  Total number of hits satisfying chosen parameters:
  390729 segs, 57163235 residues
   SUMMARIES
   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
  OM protein - protein search, using sw model
   Y58224
Y58223
Y58222
Y58222
Y58221
R927347
R92793
R48625
R48625
  BLOSUM62
Gapop 10.0 , Gapext 0.5
   length: 0
length: 2000000000
   Length
  1110
1111
1111
1112
1112
1112
1112
1113
1146
   Maximum I
Listing
   Query
Match
  1000.0
1000.0
98.1
98.1
667.9
66.0
66.0
66.1
```

Claim 31; Page. 240; 264pp; English

556 545.5 377.5 367.3 367 367 367 360 360 302

Score

Result Š.

```
9
  Вþ
   DЬ
  δÃ
   CC Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature CC canine interlewkin-13 (IL-13) clones 80 and 78. The invention relates to CC canine IL-4, canine or feline Ftt-3 ligand, canine or feline CD40, CC canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline CC canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline CC canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline CC colony-stimulating factor (GMCSF), and nucleotides which encode these CC immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as CC vaccines for therapeutic or prophylactic regulation of an immune CC response in animals (particularly cats, dogs, horses and humans).

CC They may be used to treat autoimmune or infectious diseases including CC alletgles, tumours, inflammation and graft rejection, and to increase CC the response from a co-administered antigen. The nucleotide sequences CC can also be used for the recombinant production of a protein, while CC nucleotide fragments are useful as probes, as amplification primers and CC as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for CC modulators of activity, while the antibodies may be used in detection,
  Matches
  Query Match
Best Local
                                Claim 3i
   Nucleic acids encoding useful for treating or
  WPI; 2000-072623/06.
N-PSDB; 255561, 255562, 255563, 255564.
  Sim G,
   29-MAY-1998;
   02-DEC-1999.
   Canis familiaris
  Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine.
   Canine interleukin-13 (IL-13) clone 78
   14-MAR-2000
   (HESK-) HESKA CORP
  28-MAY-1999;
  WO9961618-A2
  Y58223;
   Y58223 standard;
   Sequence
   Local Similarity
  ٢
  1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  N
  spvtpsptlkelieelvnitqnqaslcngsmvwsvnltagmycaaleslinvsdcsaiqr 60
  110;
  Yang S,
                                Page 237; 264pp; English
  targetting.
  Conservative
   (first entry)
  98US-0087306
  99WO-US11942.
  Dreitz MJ,
   Protein;
  100.0%;
   preventing e.g. tumors or autoimmune
   immunoregulatory proteins from cats or dogs,
  0
  Wonderling
  Score 556; DB 21;
Pred. No. 1.2e-61;
  Mismatches
  0;
  Indels
   Length 110;
   disease
  0;
  Gaps
  0
```

Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature

canine interleukin-13 (IL-13) clones 80 and canine IL-4, canine or feline Flt-3 ligand,

Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates

canine or feline CD40,

```
CCCXXXTTX
  δÃ
   DЬ
   XPX
  Matches 110;
   Query Match
Best Local Similarity
   Claim 3i; Page 234; 264pp; English.
  Nucleic acids encoding useful for treating or
  Sim G,
  Canis familiaris
   14-MAR-2000 (first entry)
   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
  can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides
   response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences
   colony-stimulating factor (GMCSF), and nucleotides which encode these immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune
  canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or feline Flats 1 igand, canine or feline CD40, canine IL-5, canine IL-13, feline containe or feline CD154 (CD40 light), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha) and feline granulocyte macrophage
   WPI; 2000-072623/06
   29-MAY-1998;
   02-DEC-1999.
   Y58222;
  Sequence
  28-MAY-1999;
   WO9961618-A2
   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
  Y58222 standard; Protein; 111 AA
   and in drug targetting.
   (HESK-)
   immunoregulation; tumour; cancer; autoimmune disease; vaccine
  18
   61
   21
  1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 110
   spvtpsptlkelieelvnitqnqaslcngsmvwsvnltagmycaaleslinvsdcsaiqr 80
  tgrmlkalcsqkpaagissersrdtkieviqlvknlltyvrgvyrhgnfr 130
  mature interleukin-13 (IL-13) clone
  Yang S,
   255559, Z55560
  130
   Conservative
   98US-0087306
  99WO-US11942
  Dreitz MJ,
   100.0%;
  immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
   0;
  Wonderling RS
   Score 556; DB 21;
Pred. No. 1.5e-61;
; Mismatches 0;
   Length 130;
   Indels
   0
   Gaps
   0
```

ä

131 AA;

```
Immunoregulatory proteins. The proteins, their associated nucleic acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic regulation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autoimmune or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
   colony-stimulating factor (GMCSF), and nucleotides which encode these
   and in drug targetting.
  Sequence
  RESULT
  R92794
  q
   δ
  a
   òγ
  1;
           Interferon alpin (IFN a) the profile granulocyte macrophage colony stimulating factor (GMCSF), and nuclectides which encode these nucleated acids, specific antibodies and inhibitors may be used as vaccines for therapeutic or prophylactic requlation of an immune response in animals (particularly cats, dogs, horses and humans). They may be used to treat autolimume or infectious diseases including allergies, tumours, inflammation and graft rejection, and to increase the response from a co-administered antigen. The nucleotide sequences can also be used for the recombinant production of a protein, while nucleotide fragments are useful as probes, as amplification primers and as sources of inhibitory therapeutics (e.g., antisense oligonucleotides). The proteins may be used to raise antibodies and to screen for modulators of activity, while the antibodies may be used in detection,
  Sequences Y58221-Y58222 and Y58223-Y58224 represent encoded and mature canine interleukin-13 (IL-13) clones 80 and 78. The invention relates to canine IL-4, canine or felline Fit-3 ligand, canine or felline CD40, canine or felline CD54 (CD40 ligand), canine IL-5, canine IL-13, felline interferon-alpha (IFN-alpha) and felline granulocyte macrophage
canine or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
  Gaps
   1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   Interleukin-13; IL-13; antibody; canine; inhibitor; immune response;
immunoregulation; tumour; cancer; autoimmune disease; vaccine.
  immunoregulatory proteins from cats or dogs, preventing e.g. tumors or autoimmune disease
  ..
H
  DB 21; Length 111;
   Indels
   ö
   Score 545.5; DB 2
Pred. No. 2.5e-60;
0; Mismatches 0
   Dreitz MJ, Wonderling RS;
   Canine interleukin-13 (IL-13) clone 80
   N-PSDB; Z55555, Z55556, Z55557, Z55558.
  Claim 3i; Page 231; 264pp; English.
  Y58221 standard; Protein; 131 AA
   98.1%;
ilarity 99.1%;
Conservative
   99WO-US11942
  98US-0087306
   14-MAR-2000 (first entry)
   and in drug targetting.
  Nucleic acids encoding
  useful for treating or
  WPI; 2000-072623/06
   (HESK-) HESKA CORP
   Similarity
   111 AA;
  Canis familiaris.
   Yang S,
   Query Match
Best Local Simil
Matches 110; C
   W09961618-A2.
  29-MAY-1998;
   28-MAY-1999;
   02-DEC-1999
   Seguence
  Y58221;
   Sim G,
   RESULT
   X58223
  δλ
ò
  qq
   g
```

```
Gaps
   1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   21 spvtpsptlkelieelvnitqnqaslcngsmvwsvnltagmycaaleslinvsdcsaigr 80
  esp. interleukin(s) and s. - useful for the
  Misc-difference 64
/note= "Arg at position 64 may be replaced by an acidic amino acid, including Asp"
  an
   1;
   Cytokine; mutein; interleukin-13; IL-13; agonist; antagonist; diagnosis; therapy; cancer; inflammation; degenerative disease.
    Score 545.5; DB 21; Length 131; Pred. No. 3.2e-60;
   /note= "Glu at position 11 may be replaced by
    amidated amino acid, including Lys"
   61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 110
  81 tqrmlkalcsqkpaagqissersrdtkieviqlvknlltyvrgvyrhgnfr 131
   Indels
  Mutein(s) of human and murine cytokine(s), esp. intermurine P600 contg. amino acid substitutions. - useful diagnosis and treatment of cancer, inflammation, etc.
   ;
0
   0; Mismatches
   Location/Qualifiers
   Ā
  Claim 12; Page 46; 52pp; English
   Human interleukin-13 mutein 2.
   R92794 standard; Protein; 111
    98.1%;
99.1%;
   95WO-US08950
   (first entry)
Query Match
Best Local Similarity 99.1
Matches 110; Conservative
  Zurawski SM;
   (SCHE ) SCHERING CORP.
  WPI; 1996-129335/13.
  Misc-difference 11
   WO9604306-A2
   31-JUL-1995;
  01-AUG-1994;
   Zurawski G,
  24-MAY-1996
  15-FEB-1996
  Synthetic
   R92794;
  ഹ
   Key
```

Ν

```
g
   ő
   Вр
   δÃ
   X S S S S S S S S S S S X X X
   Query Match
Best Local :
   Matches
  This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts on
Sequence
   amino acid substitutions at amino acid position 11 in helix A and/on at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural II-13 sequences. The muteins antagonise the activity of II-13 or II-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural II-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-92, R92795-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
  Claim 1; Page 60; 78pp; French.
   New cytokine having immunomodulatory activity - treating tumours and infectious or inflammatory
   monocytes
  WPI; 1992-325841/40
  Leplatois
  Caput D,
   29-MAR-1991;
08-JAN-1992;
  27-MAR-1992;
   30-SEP-1992
  EP506574-A.
  Interleukin;
  Protein with cytokine activity encoded by Nal'.
   24-FEB-1993
  R27347;
  R27347 standard; Protein; 112 AA.
  Sequence
   Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain
  (SNFI)
  62
   61
   N
  N
                              some infection
Q28941-Q28947
   σ
  TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF
   pvppstalrelieelvnitgngkaplcngsmvwsinltagmycaaleslinvsgcsaiek 61
   PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  tqrmlsgfcphkvsagfsslhvrdtkievaqfvkdlllhlkklfregrf 110
   76;
   ELF
  Q28944.
   Similarity
   Ferrara P, Guillemot J, s P, Magazin M, Minty A;
   infections
  on 41 which is either Asp or Gly. The cytokine acts on and B lymphocytes and is useful in treatment of tumours
   112
   111 AA;
   SANOFI.
  Conservative
  chemotaxis; immunomodulation;
   (first entry)
   A
A
   91FR-0003904
92FR-0000137
  92EP-0400858
  and inflammatory conditions
   67.98;
69.78;
  11;
   Score 377.5; DB 1 Pred. No. 2.3e-39;
   Mismatches
  Kaghad M, Labit-le Bouteiller C;
   DB 17;
  inflammation.
   conditions
   useful for
  Indels
  Length 111;
  109
  ۲.
   A and/or
  Gaps
  1;
```

```
Ş
   B
   Вþ
   Matches
   Query Match
                   Muteins 1 and 2 (R92793-94) of human interleukin-13 (IL-13) contain amino acid substitutions at amino acid position 11 in helix A and/or at position 64 in helix C. They are obtd. by site-directed mutagenesis of natural IL-13 sequences. The muteins antagonist the activity of IL-13 or IL-4. They have partial cytokine agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine muteins (see also R92790-92, R92795-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
  Mutein(s) of human and murine cytokine(s), esp. interleukin(s) murine P600 contg. amino acid substitutions. \dot{} useful for the diagnosis and treatment of cancer, inflammation, etc.
  Claim
Sequence
  WPI; 1996-129335/13
   31-JUL-1995;
   Misc-difference
   Misc-difference
   Synthetic
  diagnosis;
  Cytokine;
   Human
  24-MAY-1996
   R92793;
  R92793 standard; Protein;
  (SCHE ) SCHERING CORF
  15-FEB-1996.
   WO9604306-A2
   Local Similarity 69.1 nes 76; Conservative
   Ν
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  pvppstalrelieelvnitqnqkaplcngsmvwsinltagmycaaleslinvsgcsaiek
  12;
   interleukin-13
  mutein; interleukin-13; IL-13; agonist; antagonist;
  Page 46; 52pp;
  therapy;
  Zurawski SM
   (first entry)
  94US-0284393
   95WO-US08950
  Location/Qualifiers
   64
   /note-
  /note=
  cancer; inflammation; degenerative disease
   66.0%;
   mutein
   "Arg at
   "Glu at position 11 may be replaced by
   amidated
  acidic
   English.
  112
  Score 367; DB 13;
Pred. No. 4.8e-38;
Pred. No. 4.8e-38;
  ₽
  position 64 amino acid,
   amino acid,
  may be replaced including Asp"
  including Lys"
   Length 112;
  Indels
  γď
  an
   an
  and
  Gaps
   61
```

AA.

S

```
Caput D, Ferrara P, Guillemot J, Kaghad M, Labit-le Bouteiller C; Leplatois P, Magazin M, Minty A;
   New cytokine having immunomodulatory activity - useful for treating tumours and infectious or inflammatory conditions
  chemotaxis; immunomodulation; inflammation.
  Protein with cytokine activity encoded by Nal.
   Claim 1; Page 60; 78pp; French.
   R27346 standard; Protein; 112
  92EP-0400858
  91FR-0003904
   92FR-0000137
  (first entry)
  WPI; 1992-325841/40.
  (SNFI ) ELF SANOFI.
  R27348 standard;
  N-PSDB; Q28943
   Cytokine NC30
  Interleukin;
  27-MAR-1992;
  29-MAR-1991;
   08-JAN-1992;
  24-FEB-1993
  30-SEP-1992.
  24-FEB-1993
  Sequence
  R27348;
   RESULT 10
  62
  Key
   RESULT
  R27348
   R27346
   ò
   q
   δ
                                    5
  5
                                       Gaps
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   Gaps
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA, was radioactively labelled and hybridised with filter lifts prepd. from a cDNA library made from a clone of an AlO T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human II-13.
                                       5:
  2;
  Purified interleukin-13 proteins and antibodies - obtd. using
   Interleukin-13; lymphokine; immunological disorder; therapy;
   Query Match 66.0%; Score 367; DB 15; Length 132; Best Local Similarity 69.1%; Pred. No. 6e-38; Matches 76; Conservative 11; Mismatches 21; Indels
   61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   Cooks BG;
                                    Indels
   Banchereau J, Briere F, Coffman RL, C
Dang W, De Vries J, De Waal Malefyt
4, Heath A, McKenzie A, Punnonen J, Z
Pred. No. 4.8e-38;
   Sequence of human interleukin-13 (IL-13).
  mouse gene encoding related protein P600
   Claime 1; Page 126-127; 135pp; English.
                                  11;
  R48624 standard; Protein; 132
  93US-0933416.
93US-0010977.
93US-0012543.
             69.18;
   93WO-US07645.
  (first entry)
                                    Conservative
   (SCHE ) SCHERING CORP.
  WPI; 1994-083197/10.
         Best Local Similarity
Matches 76; Conserv
   132 AA;
   N-PSDB; Q56692
  Culpepper, I
Doherty TM,
  Homo sapiens.
  18-AUG-1993;
  21-AUG-1992;
   29-JAN-1993;
01-FEB-1993;
   WO9404680-A.
  14-SEP-1994
   03-MAR-1994
  diagnostic.
   Aversa G,
   Sequence
  R48624;
   00
   22
  RESULT
R48624
   q
   qq
   ò
  NAME OF THE PROPERTY OF THE PR
  a
  ò
   à
```

```
5
   Gaps
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
This protein is one of two possible forms of a new cytokine produced by T lymphocytes induced by phorbol-2-myristate-3-acetate and phytohaemaglutinin. The proteins differ only in the amino acid at position 41 which is either Asp or Gly. The cytokine acts, on monocytes and B lymphocytes and is useful in treatment of tumours and some infections and inflammatory conditions.
   2 pvppstalrelieelvnitqnqkaplcngsmvwsinltadmycaaleslinvsgcsaiek
  5,
   Length 112;
  61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   Indels
   Interleukin; chemotaxis; immunomodulation; inflammation.
  64.7%; Score 360; DB 13;
68.2%; Pred. No. 3.6e-37;
ive 11; Mismatches 22;
  Location/Qualifiers
   AA.
  Protein; 146
   Query Match
Best Local Similarity 68.2%
Matches 75; Conservative
   (first entry)
  112 AA;
```

```
RESULT
R48625
ID R4
XX
AC R4
AC R4
AX TA
DE Se
XX IN
KW JI
XX MU
   밁
  Ş
  В
  Ş
  Matches
   Query Match
Best Local
   A novel cytokine produced by T lymphocytes induced by phorbol-2-mylistate-3-acetate and phytohaemagilutinin was coded for by the sequence in clone pSE1-NC30. A second clone was also identified (pSE1-NC30bis) which differed only in the identity of codon 41. The corresponding proteins differ in the amino acid at position which is either Asp (in NC30) or Gly (in NC30bis). The cytokine acts on monocytes and B lymphocytes and Is useful in treatment o tumours and some infections and inflammatory conditions.
  14-SEP-1994
   R48625;
  R48625
   Claim 1; Page 52-53; 78pp; French.
                                 Interleukin-13; lymphokine;
   Sequence of mouse P600.
  Sequence
   See Q28941-Q28947.
  New cytokine having immunomodulatory activity - treating tumours and infectious or inflammatory
   WPI; 1992-325841/40
   Caput D, Ferrara P, Guillemot J,
Leplatois P, Magazin M, Minty A;
  Caput D,
   (SNFI)
  29-MAR-1991;
08-JAN-1992;
  27-MAR-1992;
   30-SEP-1992.
  EP506574-A.
  protein
  cleavage_site
   cleavage_site
   cleavage_site
   cleavage_site
   Loca l
   96
  61
  36
   11
   N
musculus.
  TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   tqrmlsgfcphkvsagqfsslhvrdtkievaqfvkdlllhlkklfregrf 145
  pvppstalrelieelvnitqnqkaplcngsmvwsinltadmycaaleslinvsgcsaiek 95
   PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  standard;
  l Similarity
75; Conserv
   ELF SANOFI.
  146 AA;
  Conservative
  (first entry)
  91FR-0003904.
92FR-0000137.
   92EP-0400858
  /note=
34..35
   /note=
32..33
   /note= "
35..146
   20..21
/note=
  Protein; 131
  /label-
   64.7%;
   "putative
  "putative signal peptide cleavage site"
   "putative signal peptide cleavage site"
  "putative
  NC30
  11;
   Score 360; DB 13;
pred. No. 5.1e-37;
11; Mismatches 22;
                                P600; immunological disorder;
  Ā
  Kaghad M, Labit-le Bouteiller
   signal
  signal
   peptide
  peptide
   useful for conditions
   cleavage site"
  cleavage
   Length 146;
  Indels
  site"
   2
  0;
   Gaps
  41
   2
```

```
RESULT
R92795
ID R9:
XXX DXX DXX
  δõ
  ₽
  밁
   δÃ
   Matches
   Query Match
   Best
   Murine P600
   An approx. 400 bp DNA fragment derived from a Pst/PvuII restriction digest of the mouse P600 cDNA clone was isolated. This fragment, which encompasses most of the coding region of the mouse P600 cDNA was radioactively labelled and hybridised with filter lifts prepdifrom a cDNA library made from a clone of an A10 T cell line. One clone, designated PA 10.66, was subcloned into M13 and sequenced. This sequence encodes human IL-13.
          15-FEB-1996
  Misc-difference
   Mus musculus
  24-MAY-1996
   R92795 standard;
   Sequence
  Purified interleukin-13 proteins and antibodies - mouse gene encoding related protein P600
   WPI; 1994-083197/10.
N-PSDB; Q56693.
   21-AUG-1992;
29-JAN-1993;
                                WO9604306-A2
   diagnosis; therapy;
  Cytokine; mutein; P600;
   R92795;
   Disclosure; Page 128–129; 135pp; English.
   01-FEB-1993;
  18-AUG-1993;
   03-MAR-1994
   WO9404680-A.
  Aversa
  (SCHE ) SCHERING CORP
  Culpepper,
Doherty TM,
   92
  12
  68 LCSOKPAAGISSERSRDTKIEVIOLVKNLLTYVRGVYRHGNF 109
  32 tlkelieelsnitqdqtplcngsmvwsvdlaaggfcvaldsltnisncnaiyrtqrilhg
  Local
   æ
   TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
   lcnrkapttvss--lpdtkievahfitkllsytkqlfrhgpf 131
   60;
  رن
و
  Similarity
  Banchereau J, Briere F, Coffman RL, (
, Dang W, De Vries J, De Waal Malefyt
M, Heath A, Mckenzie A, Punnonen J, ?
  131 AA;
   Conservative
  (first
  92US-0933416.
93US-0010977.
93US-0012543.
  93WO-US07645
   Location/Qualifiers 67
  /note=
   Protein; 111
  entry;
  cancer;
   54.3%;
  "Arg at position acid amino acid.
   interleukin-13; IL-13; agonist; antagonist;
cer; inflammation; degenerative disease.
   16;
   Score 302; DB 15;
Pred. No. 7.6e-30;
6; Mismatches 24;
   AΑ
   67 may be replaced
  including
  Pst/PvuII restriction ted. This fragment, f the mouse P600 cDNA,
   ::
::
::
  Length 131;
   Indels
   obtd. using
  Cooks
   Zurawski G;
   Asp"
  BG
   bу
  Ŋ
  an
   Gaps
  91
  1;
```

```
The invention relates to a new method of modulating or decreasing apoptosis in mammalian beta cells of Islets of Langerhans, endothelial cells or nerve cells. The method comprises administering a mammalian heparin-binding protein (HBP) which in a glycosylated form has: (i) a molecular weight of 28 kDa; (ii) is a produced in the azurophil granules of polymorphonuclear leukocytes: and (iii) is a chemoattractant for monocytes. The new protein is useful for preventing or treating a disorder (preferably in human patients) resulting from apoptosis of mammalian cells, including insufficient functioning of insulin production or insulin action, a neurodegenerative disorder, a neuromuscular disorder, human immunodeficiency virus and ischemic stroke. Compositions (a) comprising HBP and a proteogy of and ischemic stroke. Compositions (a) comprising the HBP and a proteogy of a mammalian mitochondrial matrix targeting protein and which binds to the HBP are useful for modulating or decreasing apoptosis in mammalian beta cells of islets of Langerhans, endothelial cells or nerve cells. Unlike prior inhibitors, the new apoptosis inhibitor of apoptosis inhibitor of apoptosis such as cancer, autoimmune disorders such as systemic lupus erythematosus, immune-mediated glomerulonephritis, and viral infections. The present sequence represents a mature human HBP.
   40 GMYCAALESLINVSDCSA-----IQRTQRMLKALCSQK---PAAGISSER-----
  Modulating or decreasing apoptosis in cells useful for treating
   28;
   Malignant hyperthermia; hypermetabolic syndrome; inhalation; anaesthetics; probe; calcium release channel; sarcoplasmic;
  Length 634;
   23; Indels
   neurodegenerative disorders and neuromuscular disorders
  13.5%; Score 75; DB 20; 27.2%; Pred. No. 1.4; Live 16; Mismatches 23;
   3981..3985
/label= phosphorylation site
4315..4318
/label= phosphorylation site
   Ryanodine receptor deduced from cDNA clone.
   | :: :: | | | || 139 rglyvalserthrvalvallegl--yalatyr 168
   82 -----SRDTKIEVIQLVKNLLTYVRGVYR 105
  Location/Qualifiers
   R11510 standard; Protein; 5072 AA.
   74pp; English.
  3119..3130
3196..3210
   (first entry)
   25; Conservative
  WPI; 1999-347615/29.
N-PSDB; X60692.
  Best Local Similarity
   634 AA;
   Claim 4; Page 10;
  Flodgaard HJ;
  Homo sapiens.
   17-JUN-1991
   Active-site
   Active-site
  reticulum.
  Seguence
   Query Match
  Peptide
Peptide
Peptide
   Peptide
   RESULT 14
R11510
   Matches
   δλ
   ò
   g
  1;
   Heparin-binding protein; HBP; apoptosis; Islets of Langerhans; beta cell; endothelial cell; nerve cell; azurophil granule; chemoattractant; cancer; polymorphonuclear leukocyte; monocyte; neurodegenerative disorder; human; neuromuscular disorder; human inmonodeficiency virus; ischemic stroke; proteoglycan; mitochondrial matrix targeting protein; viral infection; apoptosis inhibitor; immune-mediated glomerulonephritis.
   Gaps
  8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  mino acid most to the factor of the factor of the factor of mutagenesis of natural P600 sequences. The mutains antagonise the activity of IL-13 or IL-4. They have partial cytokine agonist activity, exhibit less than 80% maximal agonist activity of natural IL-2, and/or antagonize cytokine activity by least about 50% when present at a 100-fold excess. They and other cytokine mutains (see also R92790-94, R92796-802) are useful in the screening of cytokine and cytokine receptor levels, and in the diagnosis or treatment of e.g. inflammation, cancer, and degenerative disorders.
   and
   Muteins of mouse P600 (R92795) contain amino acid substitutions at
  5
  Mutein(s) of human and murine cytokine(s), esp. interleukin(s) murine P600 contg. amino acid substitutions. - useful for the diagnosis and treatment of cancer, inflammation, etc.
  53.8%; Score 299; DB 17; Length 111; 57.8%; Pred. No. 1.4e-29;
  24; Indels
  68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  17; Mismatches
  Human heparin-binding protein (HBP).
   Claim 12; Page 46; 52pp; English.
  Y21548 standard; Protein; 634
  97DK-0001394.
95WO-US08950
  98WO-DK00510
  94US-0284393
  03-AUG-1999 (first entry)
  Best Local Similarity 57.88
Matches 59; Conservative
  (NOVO ) NOVO-NORDISK AS.
  (SCHE ) SCHERING CORP.
  WPI; 1996-129335/13.
   Sequence 111 AA;
31-JUL-1995;
  01-AUG-1994;
  Homo sapiens,
  WO9926647-A1.
  03-DEC-1997;
20-NOV-1997;
  20-NOV-1998;
  03-JUN-1999
  Zurawski G,
  Query Match
```

RESULT Y21548

ò qq

g

4;

Gaps

```
RESULT 15
G06262
     S
   g
  ş
  В
  Š
   Matches
   Query Match
Best Local S
   The sequence was obtd. from several overlapping clones isolated from a human skeletal muscle cDNA library in lambda gt10. The protein encodes the human ryanodine receptor (HRR), a calcium release channel which spans the gap between the transverse tubule and the sarcoplasmic reticulum (SR) in muscle. The sustained muscle contraction in malignant hyperthermia (MH) may be caused by the release of calcium into the muscle cell cytoplasm from the SR. This is due to a defect in the gene encoding HRR. Sequences from the gene can be used for diagnosis of MH using FRPL analysis. The protein sequence would give rise to several transmembrane passages in the C-terminal fifth of the molecule; the bulk would be hydrophilic. This matches well with the structure of known ryanodine receptors. The peptides in the feature table were determined from
   G06262;
   G06262 standard; Protein; 330 AA.
  Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter;
  Arabidopsis thaliana protein fragment SEQ ID
   17-OCT-2000
              Arabidopsis thaliana
                                      termination sequence
  Sequence
  the
   Claim 11; Fig 2; 49pp; English.
   Purified DNA specific for human ryanodine receptor - useful for diagnosis of malignant melanoma.
  WPI; 1991-117517/16.
Q-PSDB; Q11415.
  Worton RG, Maclennan DH,
   (HSCR-) HSC R & D PARTNERSHIP (UTOR ) UNIV. TORONTO INNOVA.
   21-SEP-1990;
   04-APR-1991
   WO9104328-A
   (TORO-) TORONTO HOSPITAL.
  25-SEP-1989;
  521
   641 tsi 643
  101 RGV 103
   581 hiksiislldkhgrnhkvldvlcslcvcngvavrsnqdlitenllpgrelllqtnlinyv 640
  57
  9 LKELIEELVNITQNQASLCNGSMVWSVN-------LTAGMYCAALES--LINVSDCS 56
  purified receptor protein.
   l Similarity
26; Conserv
  5072 AA;
   Conservative
  (first entry)
   89US-0612726
   90WO-CA00312
   12.9%;
21.1%;
  .26;
  Britt BA;
   Score 72; DB 12; Length 5072; Pred. No. 58; 6; Mismatches 43; Indels 2
  NO: 2972
  28;
   Gaps
   4;
   28-MAY-1999;
01-JUN-1999;
03-JUN-1999;
04-JUN-1999;
04-JUN-1999;
   20-MAY-1999;
21-MAY-1999;
24-MAY-1999;
25-MAY-1999;
25-MAY-1999;
  28-APR-1999;
30-APR-1999;
30-APR-1999;
04-MAY-1999;
05-MAY-1999;
   05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
25-MAR-1999;
01-APR-1999;
06-APR-1999;
  06-MAY-1999;
06-MAY-1999;
07-MAY-1999;
11-MAY-1999;
  18-JUN-1999;
18-JUN-1999;
   18-JUN-1999;
18-JUN-1999;
  19-APR-1999;
21-APR-1999;
23-APR-1999;
23-APR-1999;
   18-JUN-1999
21-JUN-1999
  16-JUN-1999
17-JUN-1999
   14-JUN-1999
16-JUN-1999
   08-APR-1999;
16-APR-1999;
  18-JUN-1999
18-JUN-1999
  18-JUN-1999
18-JUN-1999
   08-JUN-1999
  18-MAY-1999;
19-MAY-1999;
   14-MAY-1999;
14-MAY-1999;
   10-JUN-1999
   10-JUN-1999
  14-MAY-1999;
   14 - MAY
  25-FEB-2000; 2000EP-0301439
  EP1033405-A2
99US-0139452.
99US-0139455.
99US-0139456.
99US-0139459.
99US-0139459.
99US-0139460.
99US-0139462.
99US-0139462.
99US-0139750.
99US-0139750.
99US-0139750.
99US-0139750.
99US-0139750.
99US-0139750.
99US-0140554.
99US-0140554.
99US-0140823.
99US-0141842.
  9905-0128714
9905-0130449
9905-0130449
9905-0130510
9905-0132481
9905-0132486
9905-0132486
9905-0132486
9905-0132486
9905-0132486
9905-0132486
9905-01324718
9905-0134218
9905-0134218
9905-0134219
9905-0134219
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-01342719
9905-0135124
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
9905-0136292
   99US-0126785.
99US-0127462.
99US-0128234.
  99US-0126264
```

```
990S - 0142154 . 990S - 0142154 . 990S - 0142305 . 990S - 0142303 . 990S - 0142902 . 990S - 0142902 . 990S - 0142902 . 990S - 0142902 . 990S - 0144085 . 990S - 0144085 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 0144332 . 990S - 014508 . 990S - 0147102 . 990S - 0147102 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 . 990S - 0147103 .
  990S-0150884.
990S-0151065.
990S-0151086.
990S-0151080.
990S-0151303.
990S-0152363.
990S-0152363.
990S-0152363.
   99US-0148341.
99US-0148565.
99US-0148684.
99US-0149368.
   99US-0149175.
99US-0149426.
99US-0149722.
   99US-0149929
99US-0149902
  99US-0149723
  99US-0150566
01-JUL-1999;
02-JUL-1999;
06-JUL-1999;
09-JUL-1999;
13-JUL-1999;
13-JUL-1999;
14-JUL-1999;
  13-SEP-1999;
15-SEP-1999;
16-SEP-1999;
   30-AUG-1999;
  19-JUL-1999
   AUG-1999
  01-SEP-1999
   9-JUL-1999
  20-JUL-1999
   27-AUG-19
27-AUG-19
   02-AUG-1
```

```
--RMLKALCSQKPAAGISSE-------RSRDTKIEVIQLVKNLLTYVRGVYRH 106
  Gaps
  62
  LIEELVN---ITQNQASLCNGSMVWSV-NLTAGMYCAALESLINVSDCSA----IQRTQ-
   34;
  DB 21; Length 330; 2.4;
   9908-0154779.
9908-0155486
9908-0155486
9908-01556596
9908-0155656
9908-01571753
9908-0157167
9908-0158232
9908-0158232
9908-0159339
9908-0159339
9908-0159339
9908-0159339
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0159638
9908-0160981
9908-0160981
9908-0160981
9908-0160981
9908-0160981
9908-0160981
9908-0160981
9908-0160981
9908-0160981
  99US-0161993
99US-0162142
  Query Match
Best Local Similarity 25.08
Matches 31; Conservative
   ||::
gnyk 221
   GNFR 110
20-SEP-1999;
23-SEP-1999;
24-SEP-1999;
24-SEP-1999;
29-SEP-1999;
04-OCT-1999;
05-OCT-1999;
07-OCT-1999;
  25-0CT-1999;
25-0CT-1999;
26-0CT-1999;
26-0CT-1999;
  28-OCT-1999;
29-OCT-1999;
  13-0CT-1999,
14-0CT-1999,
  14-0CT-1999;
14-0CT-1999;
  -OCT-1999,
  22-0CT-1999
25-0CT-1999
   14-0CT-1999
  -OCT-1999
   -OCT-1999
  -OCT-1999
   21-0CT-1999
   21-0CT-1999
  22-OCT-1999
  26-0CT-1999
  12
  63
  107
   ò
  g
  ò
   qq
  δy
```

7;

Search completed: May 13, 2001, 17:47:37 Job time: 12337 sec

Appli Appl Appl Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli

Sequence 25, Sequence 7, A Sequence 4, A Sequence 116, Sequence 2, A Sequence 2, A

Sequence Sequence Sequence Sequence

Sequence 8, A Sequence 26, Sequence 27,

Sequence 3, Sequence 1,

us-09-451-527-105.rai

```
2 PVTPSPTLKELIEELVNITQNQ-ASICNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   Length 111;
  Indels
   Sequence 5. Application US/08284393B
Fatent No. 5696234
GENERAL INFORMATION:
APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
  COMPUTER FRADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COPERATIOR SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DAPR:
APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
CLASSIFICATION: 435
ATONNEY/AGENT INFORMATION:
NAME: CALING, Edwin P.
REGISTRATION NUMBER: 34,090
  67.9%; Score 377.5; DB 1;
69.7%; Pred. No. 2.9e-41;
ive 11; Mismatches 21;
                  US-09-090-793-9
US-09-191-647-9
US-08-318-158-25
US-08-793-624-25
US-08-793-624-25
US-08-793-624-25
US-08-70-10194-25
US-08-70-590-301A-4
US-08-770-544-16
US-08-770-544-16
US-08-770-548-25
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
US-08-818-070-2
   US-08-779-764A-26
US-08-779-764A-27
   ALIGNMENTS
  REFERENCE/DOCKET NUMBER: DX0389 TELECOMMUNICATION INFORMATION: TELEPHONE: 415-4852-9196 TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: 5:
  LENGTH: 111 amino acids TYPE: amino acid
   Query Match 67.9
Best Local Similarity 69.7
Matches 76; Conservative
   SEQUENCE CHARACTERISTICS
  single
  MOLECULE TYPE: peptide
   linear
   94304-1104
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
100.9
  STRANDEDNESS:
   US-08-284-393B-5
  US-08-284-393B-5
g
  δλ
   Appli
Appli
Appli
Appli
Appli
Appli
   Appli
, Appl
   Appl
Appli
   (without alignments)
50.242 Million cell updates/sec
   Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
  Appli
  App]
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   Sequence 6, Ap
Sequence 16, A
Sequence 16, A
Sequence 2, Ap
Sequence 10, A
  1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 110
  Sequence 2, A
Sequence 2, A
Sequence 15,
Sequence 1, A
Sequence 1, A
   Sequence 5,
Sequence 5,
   Sequence 4,
Sequence 4,
   Sequence 14
Sequence 4,
  Description
   Sequence (
   Sequence
Sequence
Sequence
   Sequence
   Sequence
  Sequence
  May 13, 2001, 17:48:33 ; Search time 42.06 Seconds
   /cgnl_7/ptodata/1/iaa/5A_COMB.pep:*
/cgnl_7/ptodata/1/iaa/5B_COMB.pep:*
/cgnl_7/ptodata/1/iaa/6A_COMB.pep:*
/cgnl_7/ptodata/1/iaa/6B_COMB.pep:*
/cgnl_7/ptodata/1/iaa/forUS_COMB.pep:*
/cgnl_7/ptodata/1/iaa/forUS_COMB.pep:*
                    GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
   US-08-284-393B-5
PCT US95-08956-5
US-08-284-393B-4
US-08-284-393B-4
US-08-012-543-2
PCT-US93-07645-2
US-08-33-07645-2
US-08-311-121-15
US-08-371-121-16
US-08-371-121-15
US-08-371-121-15
US-08-371-121-15
US-08-373-07645-4
US-08-373-07645-4
US-08-371-33B-6
PCT-US93-07645-4
US-08-393-07645-4
US-08-393-07645-4
US-08-393-07645-4
US-08-393-07645-4
US-08-284-393B-16
US-08-284-393B-16
US-08-284-393B-16
US-08-284-393B-16
US-08-284-393B-16
US-08-393-28-10
US-08-393-28-10
US-08-393-28-10
US-08-393-28-10
US-08-393-28-10
US-08-393-29-107
US-08-393-996-107
  Total number of hits satisfying chosen parameters:
   US-08-731-716-2
US-08-375-709-15
  185757 seqs, 19210857 residues
   SUMMARIES
   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
   protein search, using sw model
  BLOSUM62
Gapop 10.0 , Gapext 0.5
   Issued_Patents_AA:*
  US-09-451-527-105
  length: 0
length: 2000000000
  Query
Match Length
  132
132
111
112
112
131
131
1131
```

Score

Result No.

Minimum DB seq Maximum DB seq

Database

Perfect score:

sedneuce:

OM protein -

Run on:

Scoring table:

Searched:

1;

Gaps

```
밁
  밁
  Š
   US-08-284-393B-4
  ; MOLECULE TYPE: protein PCT-US95-08950-5
  RESULT 2
PCT-US95-08950-5
   밁
  ş
  Sequence 4, Application US/08284393B Patent No. 5696234
  Query Match
Best Local Similarity
   Matches
  Sequence 5, Application PC/TUS9508950
   GENERAL INFORMATION:
   GENERAL INFORMATION:
   TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO:
  APPLICANT: Zurawski, Sandra M. APPLICANT: Zurawski, Gerard TITLE OF INVENTION: MUTEINS OF
  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                    CORRESPONDENCE
                                      NUMBER OF SEQUENCES:
  SEQUENCE CHARACTERISTICS:
  REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
  APPLICATION NUMBER: US 00 FILING DATE: 01-AUG-1994 ATTORNEY/AGENT INFORMATION:
  SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
  APPLICANT: Zurawski, APPLICANT: Zurawski,
  PRIOR APPLICATION DATA:
  CORRESPONDENCE ADDRESS:
   NUMBER OF SEQUENCES:
   TITLE OF INVENTION:
  61 TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   STRANDEDNESS:
  62 TQRMLSGFCPHKVSAGFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
   CITY: Palo Alto
STATE: California
     ADDRESSEE:
   TOPOLOGY:
  NAME: Ching, Edwin P. REGISTRATION NUMBER:
  CLASSIFICATION:
   FILING DATE:
   62
   APPLICATION NUMBER:
  ZIP:
   COUNTRY:
  STREET:
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  LENGTH:
   ADDRESSEE:
  2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
   TQRMLSGFCPHKVSAGFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
  TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   76;
  94304-1104
   amino acid
   111 amino acids
  901 California Avenue
  USA
   Conservative
   linear
   DNAX Research Institute
DNAX Research Institute
                  ADDRESS:
   single
   MUTEINS OF MAMMALIAN CYTOKINES
   MUTEINS OF MAMMALIAN CYTOKINES
  67.9%; Score 377.5; DB 5 69.7%; Pred. No. 2.9e-41;
  Gerard
   Sandra M.
   US 08/284,393
   PCT/US95/08950
  34,090
   11;
   DX0389
   Mismatches
   DB 5;
   21;
  Length 111;
   Indels
   1;
   Gaps
   ۲.
```

```
밁
  ğ
  В
  δð
  US-08-284-393B-4
  RESULT
   PCT-US95-08950-4
   Sequence 4, Application PC/TUS9508950 GENERAL INFORMATION:
  Matches
  Query Match
  Best
  TELEFAX: 415-496-1200 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                     CLASSIFICATION:
CRASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 08/284,393
  ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
  APPLICANT: ZURAWSKI, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 13
   APPLICANT:
   REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
  ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
   CORRESPONDENCE ADDRESS:
   CURRENT APPLICATION DATA:
   MOLECULE TYPE:
               APPLICATION NUMBER: US 0 FILING DATE: 01-AUG-1994
  APPLICATION NUMBER: FILING DATE:
  CITY:
   61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  COUNTRY:
   STATE:
   STREET:
  ADDRESSEE:
   62 TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 111
   STRANDEDNESS:
TOPOLOGY: li
  SOFTWARE:
   Local
  CLASSIFICATION:
   FILING DATE:
  APPLICATION NUMBER:
   OPERATING SYSTEM:
   COMPUTER:
  STATE:
  STREET:
   LENGTH:
  2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  1 Similarity 69.76; Conservative
  r: 901 California Avenue
Palo Alto
  94304-1104
  amino acid
  Palo Alto
Californía
   California
  112 amino acids
   901 California
  USA
   USA
  Zurawski, Sandra M.
  PatentIn Release #1.0, Version #1.30
   IBM PC compatible SYSTEM: PC-DOS/MS-DOS
  DNAX Research Institute
   peptide
   01-AUG-1994
   single
   66.0%;
   US/08/284,393B
   PCT/US95/08950
   4..
  11;
  Score 367; DB 1;
Pred. No. 6.5e-40;
1; Mismatches 21;
  DX0389
   Version #1.25
  Length 112;
  Indels
  2
   Gaps
```

Ν

ò

õ d

```
2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  2 PVTPSPTLKELTEELVNITQNQ-ASICNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  22 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 81
  5;
  ä
  61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  Length 132;
  Indels
  21; Indels
  66.0%; Score 367; DB 1;
69.1%; Pred. No. 8.3e-40;
tive 11; Mismatches 21
  66.0%; Score 367; DB 5; 69.1%; Pred. No. 8.3e-40;
  11; Mismatches
  Human Interleukin-13
  Human Interleukin-13
  SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
FILING DATE:
  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
  FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
  UMBER: US 07/933416
21-AUG-1992
  Sequence 2, Application PC/TUS9307645A GENERAL INFORMATION:
  Sequence 2, Application PC/TUS9307645 GENERAL INFORMATION:
  Apple Macintosh
  INFORMATION FOR SEQ ID NO: 2:
  NUMBER OF INVENTION: Human NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
LENGTH: 132 amino acids
  SEQUENCE CHARACTERISTICS:
LENGTH: 132 amino acids
  Query Match
Best Local Similarity 69.19
Matches 76; Conservative
  Conservative
  ; MOLECULE TYPE: protein US-08-012-543-2
  TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US93-07645A-2
  APPLICANT:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
  COMPUTER: Apple NOPERATING SYSTEM: SOFTWARE: Microsc
                        amino acid
  linear
  Query Match
Best Local Similarity
Matches 76; Conserv
  amino acid
  FILING DATE:
  RESULT 6
PCT-US93-07645A-2
  TOPOLOGY:
  RESULT 7
PCT-US93-07645-2
  APPLICANT:
  g
  Ω
  qq
  Óλ
  a
  Óλ
  Db
  5;
  Gaps
  2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
  5;
  61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  Length 112;
  Indels
  SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
  21;
  Pred. No. 6.5e-40;
  DB 5;
  11; Mismatches
  APPLICANT: Aversa, Gregorio
APPLICANT: Briere, Francine
APPLICANT: Banchereau, Jacques
APPLICANT: de Vries, Jan
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 27
  Score 367;
  CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
  NUMBER: US/08/012,543
01-FEB-1993
  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933,416
FILING DATE: 21-AUG-1992
ATTORNEY AGENT INFORMATION:
  NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX0302K1
                  REFERENCE/DOCKET NUMBER: DX0389
TELECOMMUNICATION INFORMATION:
TELEFONE: 415-852-9196
TELEFAX: 415-496-1200
  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
  Dang, Warren
de Waal Malefyt, Rene
Heath, Andrew
  Sequence 2, Application US/08012543 Patent No. 5596072
  REGISTRATION NUMBER: 34,090
  Culpepper, Janice
McKenzie, Andrew
  TELECOMMUNICATION INFORMATION
  66.0%;
69.1%;
  4
  TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
  Floppy disk
  TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
LENGTH: 112 amino acids
  Query Match 66.0%
Best Local Similarity 69.1%
Matches 76; Conservative
  TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US95-08950-4
  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
  APPLICATION NUMBER:
  STATE: Californi
COUNTRY: USA
ZIP: 94304-1104
  FILING DATE: 01 CLASSIFICATION:
  GENERAL INFORMATION:
APPLICANT: Culpep
  US-08-012-543-2
  a
```

ä

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk

1;

```
ş
  US-08-284-393B-15
  Ş
  PCT-US93-07645-2
  Sequence 15, Approximately No. 5696234
   Best Loc
Matches
  Query Match
  FILING DATE: 21-AUG-1992 INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:
NFORMATION FOR SEQ ID NO:
  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM.PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
  SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
                                   TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196
   ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,0
REFERENCE/DOCKET NUMBER:
   APPLICANT: Zurawski, APPLICANT: Zurawski,
  CORRESPONDENCE ADDRESS
   NUMBER OF SEQUENCES:
  TITLE OF INVENTION:
   MOLECULE TYPE:
   PRIOR APPLICATION DATA:
  CURRENT APPLICATION DATA:
   STREET: 901 Call
   Local Similarity hes 76; Conserv
                    TELEFAX:
   CLASSIFICATION:
  APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-AUG-1994
   COUNTRY:
  82 TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 131
  APPLICATION NUMBER: FILING DATE: 19930
   COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6
SOFTWARE: Microsoft Word 5.1a
  STATE:
  61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIOLVKNLLTYVRGVYRHGNF 109
  22 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 81
  APPLICATION NUMBER:
  FILING DATE:
   ADDRESSEE:
  TOPOLOGY:
   APPLICATION NUMBER: US 08/010977
  LENGTH:
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   INFORMATION:
  94304-1104
  : 132 amino acids
amino acid
  California
   Application US/08284393B
  901 California Avenue
   USA
                  415-496-1200
  Zurawski, Sandra M.
   Conservative
   DNAX Research Institute
   protein
  29-JAN-1993
  19930818
   MUTEINS OF MAMMALIAN CYTOKINES
   66.0%; Score 367; DB 5; 69.1%; Pred. No. 8.3e-40;
  Macintosh 6.0.5
   Gerard
  US 07/933416
   PCT/US93/07645
  34,090
   11;
   DX0389
  Mismatches
  Length 132;
  Indels
  Gaps
```

```
γ
  DЪ
   밁
   US-08-371-121-1
  US-08-284-393B-15
   Sequence 1, Application US/08371121 Patent No. 5652123
  Query Match 65.9%;
Best Local Similarity 67.9%;
Matches 74; Conservative 1
   COUNTAL.
ZIP: 20007-510>
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: IBM PC compatible
TOWNITER: IBM PC DOS/MS-DOS
TOWNITER: TOWNIE PC-DOS/MS-DOS
   GENERAL INFORMATION:
   FILING DATE: 08-JAN-PRIOR APPLICATION DATA:
APPLICATION NUMBER:
   APPLICATION NUMBER: PCT/I
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 9:
   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161
FILING DATE: 30-NOV-1992
PRIOR APPLICATION DATA:
  OPERATING SYSTEM: PC-I
SOFTWARE: PatentIn Re-
CURRENT APPLICATION DATA
   TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
NUMBER OF SEQUENCES: 27
   TELECOMMUNICATION INFORMATION:
  APPLICANT: MAGAZIN, Marilyn TITLE OF INVENTION: Protein
  APPLICANT:
   MOLECULE TYPE:
  FILING DATE: 29-MAR-1991 ATTORNEY/AGENT INFORMATION:
   CORRESPONDENCE ADDRESS:
  APPLICANT:
   APPLICANT:
  APPLICANT:
   APPLICANT:
  APPLICANT:
  STREET: 3000
   APPLICATION NUMBER: FILING DATE:
   STRANDEDNESS:
TOPOLOGY: li
  REGISTRATION NUMBER:
  CLASSIFICATION: 435
   61 TQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  REFERENCE/DOCKET NUMBER:
  ADDRESSEE:
  62 TQDMLSGFCPHKVSAGFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 110
                                  TELEPHONE:
  LENGTH:
  2 PYTPSPTLKELIEELVNITQNQ-ASLCNGSMYWSVNLTAGMYCAALESLINVSDCSAIQR 60
   2 PVPPSTALRKLIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 61
   amino acid
  3000 K Street, N.W., Suite 500 ashington, D.C.
  111 amino acids
   GUILLEMOT, Jean-Claude LEPLATOIS, Pascal
   PatentIn Release #1.0, Version #1.25
  KAGHAD, Mourad
   LABIT-LE BOUTEILLER, Christine
   FERRARA, Pascual
  CAPUT, Daniel
(202) 6/2
-202) 672-5399
  FOLEY & LARDNER
   Bernhard D.
   08-JAN-1992
   peptide
  single
   Adrian
   FR 91 03904
  FR 91 00137
  PCT/FR92/00280
   US/08/371,121
  28,665
  12; Mismatches
  Score 366.5; DB 1;
Pred. No. 7.5e-40;
"" matches 22;
  16781/383
  Length 111;
  Indels
  1;
  Gaps
```

2

q ò g

```
2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   Length 146;
   64.0%; Score 356; DB 1; Length 112; 67.3%; Pred. No. 1.7e-38; 1ve 12; Mismatches 22; Indels
  Indels
   CORDUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: DEAGNIS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/284,393B
FILING DATE: 01-Aug-1994
CLASSIFICATION: 435
ATTORREY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
   APPLICANT: Zurawski, Sandra M.
APPLICANT: Zurawski, Gerard
TITLE OF INVENTION: MUTEINS OF MAMMALIAN CYTOKINES
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
   64.7%; Score 360; DB 1; 68.2%; Pred. No. 7.7e-39;
   11; Mismatches
                         16781/383
   ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
  ; Sequence 14, Application US/08284393B
; Patent No. 5696234
   DX0389
       28,665
  TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
  REFERENCE/DOCKET NUMBER: DX
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
   TELEFAX: (202) 672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                            REFERENCE/DOCKET NUMBER:
  : 146 amino acids
amino acid
  LENGTH: 112 amino acids
  Conservative
   TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
   Query Match 64.0
Best Local Similarity 67.3
Matches 74; Conservative
  ; MOLECULE TYPE: protein US-08-371-121-16
   TYPE: amino acid
STRANDEDNESS: single
   COMPUTER READABLE FORM:
  peptide
    REGISTRATION NUMBER:
  CITY: Palo Alto
STATE: California
   linear
   Query Match
Best Local Similarity
Matches 75; Conserv
   TOPOLOGY: linear
   ZIP: 94304-1104
  GENERAL INFORMATION:
  MOLECULE TYPE:
   US-08-284-393B-14
  US-08-284-393B-14
   TOPOLOGY:
   COUNTRY:
   LENGIH:
   qq
  Сp
   δ
  2,
  APPLICANT: LABIT-LE BOUTEILLER, Christine
APPLICANT: MAGAZIN, Marilyn
TITLE OF INVENTION: Protein having a cytokine type
TITLE OF INVENTION: activity, recombinant DNA coding for this protein,
TITLE OF INVENTION: transformed cells and microorganisms.
  Gaps
   2 PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAXMYCAALESLINVSGCSAIEK 61
   2 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  2;
  61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  62 TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 111
  Length 112;
   Indels
  OTHER INFORMATION: /label= xaa
OTHER INFORMATION: /note= "amino acid is Asp or Gly'
  SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
  64.7%; Score 360; DB 1; 68.2%; Pred. No. 5.2e-39; tive 11; Mismatches 22,
  APPLICANT: CAPUT, Daniel
APPLICANT: FERRARA, Pascual
APPLICANT: GUILLEMOT, Jean-Claude
APPLICANT: LEPLATOIS, Pascal
APPLICANT: MINTY, Adrian
APPLICANT: KAGHAD, Mourad
APPLICANT: LABIT-LE BOUTEILLER, Christine
   ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
   PRIOR APPLICATION 1973

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/938,161

FILING DATE: 30-NOV-1992

PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR92/00280

FILING DATE: 27-MAR-1992

PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 00137

FILING DATE: 08-JAN-1992

PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 03904

FILING DATE: 29-MAR-1991

ATTORNEY/AGENT INFORMATION:
NAME: SAXE, BERNHARD D.
   APPLICATION NUMBER: US/08/371,123
  PC-DOS/MS-DOS
   Sequence 16, Application US/08371121 Patent No. 5652123
   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
COPERATING SYSTEM: PC-DOS/MS-
SOFTWARE: PATENTIN Release #
INFORMATION FOR SEQ ID NO: 1:
                                       LENGTH: 112 amino acids
TYPE: amino acid
TOPOLOGY: linear
  NAME/KEY: Modified-site
                     SEQUENCE CHARACTERISTICS:
  Ouery Match
Best Local Similarity 68.29
Matches 75; Conservative
  Washington, D.C.
   MOLECULE TYPE: protein
   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
   CLASSIFICATION: 435
  GENERAL INFORMATION:
   Y: USA
20007-5109
  FILING DATE:
  LOCATION:
   RESULT 10
US-08-371-121-16
  CITY: Wa COUNTRY:
   US-08-371-121-1
```

5

Gaps

5;

```
밁
   Š
  В
   US-08-012-543-4
   US-08-012-543-4
   RESULT
   В
   В
  Sequence 4, Approximately No. 559607
   Matches
  Query Match
Best Local Similarity
   GENERAL INFORMATION:
  INFORMATION FOR SEQ ID NO:
  SEQUENCE CHARACTERISTICS:
   TELECOMMUNICATION INFORMATION: TELEPHONE: 415-852-9196
   ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin D
  PRIOR APPLICATION DATA:
APPLICATION NUMBER: I
FILING DATE: 21-AUG-
   COMPUTER READABLE FORM:
   CURRENT APPLICATION DATA:
   CORRESPONDENCE ADDRESS
   NUMBER OF SEQUENCES:
   TITLE OF
   APPLICANT:
   APPLICANT:
  STREET: 901 California
  32
   APPLICATION NUMBER: US/08/012,543
  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
   62
92 LCNRKAPTTVSS--LPDTKIEVAHFITKLLSYTKQLFRHGPF 131
                                68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   TOPOLOGY:
   FILING DATE: 01 CLASSIFICATION:
   MEDIUM TYPE:
   COUNTRY:
   61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   REFERENCE/DOCKET NUMBER:
  NAME: Ching, Edwin P. REGISTRATION NUMBER:
   SOFTWARE:
   ADDRESSEE:
  CENGTH:
   8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
   N
   PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
  TLKELIEELSNITQDQTPLCNGSMVWSVDLAAGGFCVALDSLTNISNCNAIYRTQRILHG 91
   TODMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 111
   PVPPSTALRKLIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK
   60;
   94304-1104
   amino acid
  TYPE: protein
   INVENTION:
   Application US/08012543
  131 amino acids
  901 California Avenue
   Zurawski, Gerard
VENTION: Human Interleukin-13
FOURENCES: 27
   USA
   415-496-1200
   Conservative
  de Vries, Jan
   Banchereau, Jacques
  Briere, Francine
   Aversa,
   de Waal Malefyt, Rene
   Dang, Warren
   McKenzie, Andrew
   Culpepper,
   PatentIn Release #1.0, Version #1.25
   Heath, Andrew
   Linear
   DNAX Research Institute
  10MBER: US 07/933,416
21-AUG-1992
  01-FEB-1993
  Floppy disk
   Gregorio
  54.3%; Score 302; DB 1; Length 131; 58.8%; Pred. No. 2e-31;
   Janice
   34,090
   4.
   16; Mismatches
   DX0302K1
   24;
   Indels
  Gaps
   61
```

```
RESULT 13
US-08-371-121-25
                δÃ
  망
  Q
  ; TOPOLOGY: 1:
; MOLECULE TYPE:
US-08-371-121-25
   Sequence 25, App.
  Matches
   Best
   Query Match
  GENERAL INFORMATION:
   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
   APPLICATION NUMBER: US 07/938,161 FILING DATE: 30-NOV-1992 PRIOR APPLICATION DATA:
   TITLE OF INVENTION: TITLE OF INVENTION:
   TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 672-5300
   APPLICATION NUMBER: PCT/
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
   CLASSIFICATION: 435 PRIOR APPLICATION DATA:
  CURRENT APPLICATION DATA:
   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
  CORRESPONDENCE ADDRESS:
   ATTORNEY/AGENT INFORMATION:
   APPLICANT:
   PRIOR APPLICATION DATA:
   NUMBER OF SEQUENCES:
  APPLICANT:
   APPLICANT:
  APPLICANT:
  APPLICANT:
  APPLICANT:
   APPLICANT:
   TELLEFAX: \-
TELEFAX: 904136
   APPLICANT:
  COMPUTER: IBM PC OPERATING SYSTEM: SOFTWARE: PatentI
  ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W., Suite 500
CITY: Washington, D.C.
68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   Local Similarity
   FILING DATE:
   FILING DATE:
   FILING DATE:
  32
   REFERENCE/DOCKET NUMBER:
  REGISTRATION
  APPLICATION NUMBER:
  APPLICATION NUMBER:
  APPLICATION NUMBER:
   COUNTRY:
  NAME:
   LENGTH:
   TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  TLKELIEELSNITQDQTPLCNGSMVWSVDLAAGGFCVALDSLTNISNCNAIYRTQRILHG
  60;
  20007-5109
  amino acid
  SAXE,
  Application US/08371121
  131 amino acids
  USA
   (202) 672-5399
  Conservative
   MAGAZIN, Marilyn
  MINTY, Adrian
   GUILLEMOT, Jean-Claude
   CAPUT,
   LABIT-LE BOUTEILLER, Christine
   KAGHAD,
   FERRARA,
   PatentIn Release #1.0, Version #1.25
  LEPLATOIS,
  IBM PC compatible SYSTEM: PC-DOS/MS-DOS
  NUMBER:
   protein
   Bernhard D
   08-JAN-1992
   29-MAR-1991
   Daniel
  transformed cells and microorganisms: 27
   Mourad
   54.3%;
  activity,
   Pascual
  Protein having a cytokine type
   FR 91 00137
  FR 91 03904
  Pascal
   PCT/FR92/00280
  US/08/371,121
  28,665
  16;
   16781/383
   Score 302; DB 1
Pred. No. 2e-31;
  recombinant DNA coding for this protein,
  Mismatches
  DB 1;
  24;
   Length 131;
  Indels
  Gaps
```

a

```
Search completed: May 13, 2001, 17:48:34
Job time: 12137 sec
  INFORMATION FOR SEQ ID NO:
   Op
  Д
   ò
  ōλ
  .;
  Gaps
  8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  5;
  Length 131;
  24; Indels
92 LCNRKAPTTVSS--LPDTKIEVAHFITKLLSYTKQLFRHGPF 131
   68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   DB 5;
   Score 302; DB 5
Pred. No. 2e-31;
  16; Mismatches
   TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUW TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
  TITLE OF INVENTION: Human Interleukin-13
NUMBER OF SEQUENCES: 6
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
  SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645A
  SOFTWARE: MICROSOFT WORD 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07645
FILING DATE: 19930818
PRIOR APPLICATION DATA:
  MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 6.0.5
   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/012543
FILING DATE: 01 FEB-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/010977
FILING DATE: 29-JAN-1993
   FILING DATE: 29-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/933416
FILING DATE: 21-AUG-1992
INFORMATION FOR SEQ 1D NO: 4:
SEQUENCE CHARACTERISTICS:
  PCT-US93-07645A-4
; Sequence 4, Application PC/TUS9307645A
; GENERAL INFORMATION:
  APPLICATION NUMBER: US 08/012543
FILING DATE: 01-FEB-1993
PRIOR APPLICATION DATA:
  APPLICATION NUMBER: US 08/010977 FILING DATE: 29-JAN-1993 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/933416
  Sequence 4, Application PC/TUS9307645 GENERAL INFORMATION:
   54.3%;
58.8%;
  21-AUG-1992
   LENGTH: 131 amino acids TYPE: amino acid
  Query Match
Best Local Similarity 58.88
Matches 60; Conservative
   MOLECULE TYPE: protein PCT-US93-07645A-4
   linear
  FILING DATE:
  FILING DATE:
  RESULT 15
PCT-US93-07645-4
  APPLICANT:
   APPLICANT:
  92
  RESULT
```

q

ò

QQ

ò

```
Gaps
  32 TLKELIEELSNITQDQTPLCNGSMVWSVDLAAGGFCVALDSLTNISNCNAIYRTQRILHG 91
   8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  5;
   Length 131;
   Query Match 54.3%; Score 302; DB 5; Length 13 Best Local Similarity 58.8%; Pred. No. 2e-31; Matches 60; Conservative 16; Mismatches 24; Indels
  68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  92 LCNRKAPITVSS--LPDIKIEVAHFITKLLSYTKOLFRHGPF 131
                            LENGTH: 131 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US93-07645-4
SEQUENCE CHARACTERISTICS LENGTH: 131 amino acid
```

ï

```
May 13, 2001, 21:48:44 ; Search time 64.5 Seconds (without alignments) 117.202 Million cell updates/sec
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
  OM protein - protein search, using sw model
   Run on:
```

1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 110 BLOSUM62 Gapop 10.0 , Gapext 0.5 US-09-451-527-105 556 Title: Perfect score: Scoring table: Sequence:

198801 seqs, 68722935 residues Searched:

198801 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Database :

PIR\_67:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

| Result     |       | Query |                 |    |        |      |
|------------|-------|-------|-----------------|----|--------|------|
| NO.        | Score | Match | Match Length DB | DB | ID     | Desc |
| -          | 367   | 66.0  | 146             | ¦  | A47481 | inte |
| 7          | 302   | 54.3  | 131             | N  | E30552 | T-ce |
| m          | 294.5 | 53.0  |                 | 7  | 152290 | inte |
| 4          | 72    | 12.9  |                 | ٦  | A35041 | ryan |
| ស          | 71.5  | 12.9  |                 | 7  | J01176 | sepi |
| 9          | 71.5  | 12.9  |                 | 7  | S62423 | ATP- |
| 7          | 71    | 12.8  | 262             | 7  | A36024 | sepi |
| <b>6</b> 0 | 70.5  | 12.7  |                 | 7  | T00035 | suou |
| σi         | 70    | 12.6  |                 | Н  | Z2BPA4 | rapi |
| 10         | 69.5  | 12.5  |                 | 7  | S47538 | acro |
| •          | (     | •     |                 | ć  | 0,,,,, |      |

| Description         |      | Therteuxin'is pre | interleukin-13 - r | ryanodine receptor | sepiapterin reduct | ATP-dependent RNA | sepiapterin reduct | nonstructural poly | ~      |        | seplapterin reduct | ryanodine receptor | ryanodine receptor | . ubiquitin-specific | transcription acti | hypothetical prote | myosin-RhoGAP prot | DNA topoisomerase | Ig gamma chain C r | hypothetical prote | DNA mismatch repai | conserved hypothet | hypothetical prote |        | hypothetical prote | alpha-1 proteinase | hypothetical prote | -      | histone Hlt - pig |
|---------------------|------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------|--------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------|-------------------|
| SUMMARIES           |      | E30552            | 152290             | A35041             | JQ1176             | S62423            | A36024             | T00035             | Z2BPA4 | S47538 | S52110             | I46646             | B35041             | S50277               | S43738             | S46769             | T31099             | A44978            | GHRB               | T27254             | H72427             | н82920             | T20165             | T51792 | T19508             | A29952             | C64028             | T41891 | HSPG1T            |
| DB                  | -    | ٠,                | 1 (1               | ٦                  | 7                  | ~                 | 7                  | 7                  | Н      | 7      | 7                  | Н                  | 7                  | 7                    | 7                  | 7                  | 7                  | 7                 | -                  | 7                  | 7                  | 7                  | 7                  | 7      | 7                  | 7                  | 7                  | 7      | 7                 |
|                     | 146  | 131               | 131                | 5032               | 261                | 481               | 262                | 1811               | 725    | 431    | 261                | 5035               | 5037               | 802                  | 936                | 1164               | 2626               | 1221              | 323                | 398                | 516                | 336                | 475                | 655    | 27                 | 1477               | 139                | 168    | 211               |
| s<br>Query<br>Match | 66.0 | 2.4               | 53.0               | 7                  | ς.                 | 12.9              |                    |                    |        | 12.5   | 12.4               | 12.4               |                    |                      |                    |                    |                    |                   |                    |                    | 11.8               |                    |                    | •      | •                  | •                  | 11.6               |        | 11.6              |
| Score               | 367  | 302               | 294.5              | 72                 | 71.5               | 71.5              | 71                 | 70.5               | 70     | 69.5   | 69                 | 69                 | 69                 | 99                   | 68                 | 67.5               |                    | 9                 | 66.5               | 9                  | 65.5               | 65                 | 65                 | 65     | 65                 | 9                  | 64.5               | •      | 64.5              |
| sult<br>No.         | -    | ٠,                | m                  | 4                  | ហ                  | 9                 | 7                  | œ                  | σi     | 10     | 11                 | 12                 | 13                 | 14                   | 15                 | 16                 | 17                 | 18                | 19                 | 20                 | 21                 | 22                 | 23                 | 24     | 22                 | 56                 | 27                 | 28     | 53                |

| hypothetical prote | sugar ABC transpor<br>transcription fact | alcohol dehydrogen | zinc transporter Z | hypothetical prote | ryanodine-binding | dual specificity p | probable membrane | probable transcrip | hypothetical prote | hypothetical prote | hypothetical prote | glucose-6-phosphat | mating-type locus | zinc transport pro |
|--------------------|------------------------------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| 116000             | D/5454<br>S17196                         | A25978             | S54302             | T05882             | A54161            | A40781             | S53939            | G70622             | T46354             | T22124             | D69841             | F82727             | JQ2151            | S54303             |
| 20                 | N (1                                     | Η.                 | ~                  | 7                  | -                 | 7                  | 7                 | 7                  | 7                  | 7                  | ~                  | 7                  | 7                 | 7                  |
| 451                | 701                                      | 383                | 503                | 1026               | 5037              | 168                | 1004              | 1234               | 1397               | 258                | 283                | 477                | 504               | 207                |
| 11.6               | 11.6                                     | 11.5               | 11.5               | 11.5               | 11.5              | 11.4               | 11.4              | 11.4               | 11.4               | 11.3               | 11.3               | 11.3               | 11.3              | 11.3               |
| 64.5               | 64.5                                     | 64                 | 64                 | 64                 | 64                | 63.5               | 63.5              | 63.5               | 63.5               | 63                 | 63                 | 63                 | 63                | 63                 |
| 30                 | 32                                       | 33                 | 34                 | 35                 | 36                | 37                 | 38                | 39                 | 40                 | 41                 | 42                 | 43                 | 44                | 45                 |

## ALIGNMENTS

RESULT A47481

| interleukin-13 precursor - human<br>N:Contains: interlaukin 13 short form                                                 |
|---------------------------------------------------------------------------------------------------------------------------|
| C. Species: Homo sapiens (man)                                                                                            |
| C;Date: 21-Jan-1994 #sequence_revision 06-Dec-1996 #text_change 22-Jun-1999.                                              |
| C;Accession: I38060; I38061; A47481                                                                                       |
| <pre>R:Minty, AJ.:; Chalon, P.; Derocq, J.M.; Dumont, X.; Guillemot, J.C.; Kaghad, M.; Lab</pre>                          |
| A+ura 462 248-250 1993                                                                                                    |
| Aritle: Interleukin-13 is new human lymphokine regulating inflammatory and immune                                         |
| A; Reference number: 138060; MUID:93211479                                                                                |
| A;Accession: I38060                                                                                                       |
| A;Status: translated from GB/EMBL/DDBJ                                                                                    |
| A MOLECULE TYPE: MRA<br>A. Desidine : 1-146 / Oper.                                                                       |
| A.C. Coss. references: EMBL: X69079: NID: 0297787: PIDN: CAA48823.1: PID: 0580330                                         |
| A; Accession: 138061                                                                                                      |
| A;Status: translated from GB/EMBL/DDBJ                                                                                    |
| A; MOlecule type: mRNA                                                                                                    |
| A;Residues: 15-146 <re2></re2>                                                                                            |
| A;Cross-references: EMBL:X69079; NID:g297787; PIDN:CAA48824.1; PID:g673420                                                |
| R; McKenzie, A.N.; Culpepper, J.A.; de Waal Malefyt, R.; Briere, F.; Punnonen, J.; Ave                                    |
| Proc. Natl. Acad. Sci. U.S.A. 90, 3735-3739, 1993                                                                         |
| A, Title: Interleukin 13, a T-cell-derived cytokine that regulates human monocyte and                                     |
| A;Reference number: A47481; MUID:93234572                                                                                 |
| A; Accession: A47481                                                                                                      |
| A; Status: preliminary; not compared with conceptual translation                                                          |
| A; Molecule type: mRNA                                                                                                    |
| A;Residues: 15-146 <mck></mck>                                                                                            |
| A; Cross-references: GB:L06801; NID:9186275; PIDN:AAA36107.1; PID:9186276                                                 |
| A; Experimental source: Con A-activated CD8+ T-cell clone, A10                                                            |
| A; Note: sequence extracted from NCBI backbone (NCBIP:129773)                                                             |
| C;Genetics:                                                                                                               |
| A; Gene: GDB: ILL13; P600; NC30                                                                                           |
| A;Cross-references: GDB:138171; OMIM:147683                                                                               |
| A;Map position: 5q31-5q31                                                                                                 |
| C;Superfamily: interleukin-13                                                                                             |
| C; Keywords: alternative initiators; cytokine; glycoprotein                                                               |
| F:1.146/Product: interleukin-13 precursor, long splice form #status predicted <prl></prl>                                 |
| Fil-24/Domain: signal sequence #status predicted <sig></sig>                                                              |
| Fils-146/Product: Interleukin-13 precursor, short splince form #status predicted <prs></prs>                              |
| F.327 -140/FIGUACH: III-ELIBERIHI 12 #STEULUS PIEGLICHEU AMMIY) F.527 13 71 26/Dinding eite. Carbobydrafe / Mediche Ammiy |
| tion trion triude since disonguiance (no.) tookasency fraction                                                            |

2 PVTPSPTLKELIBELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60

ò

Query Match 66.0%; Score 367; DB 1; Length 146; Best Local Similarity 69.1%; Pred. No. 1.3e-31; Matches 76; Conservative 11; Mismatches 21; Indels

5

Gaps

2;

```
A;Title: Cloning of rat interleukin-13 (IL-13) cDNA A;Reference number: I52290; MUID:94092138 A;Status: North Nort
RESULT
A35041
   밁
   ş
   В
   20
  A; Gene: 1L-13
C; Superfamily:
   A;Molecule type: mRNA
A;Residues: 1-131 <RES>
A;Cross-references: GB:L26913; NID:g438875; PIDN:AAA16478.1; PID:g438876
  дЬ
  ş
   Ş
   RESULT
E30552
   C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Aug-1996 #sequence_revision 02
   Вp
   A;Cross-references: GB:M23504; NID:g533246; PIDN:AAA40149.1; PID:g533247 C;Superfamily: interleukin-13
   s of various activation processes A; Reference number: A30552; MUID: A; Accession: E30552
  J. Immunol. 142, 679-687, 1989 A:Title: A family of small inducible proteins secreted by leukocytes are members of a
  T-cell activation protein P600 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 28-Aug-1989 #sequence_revision 28-Aug-1989 #text_change 16-Jul-1999
C;Accession: E30552
  뫄
   Q
   рь
   A; Status: preliminary; translated from GB/EMBL/DDBJ
  C; Accession:
   A; Residues: 1-131 <BRO>
  A; Molecule type: mRNA
   R; Brown, K.D.;
   interleukin-13 - rat
  Query Match
Best Local
   Genetics:
   Matches
   Query Match
  Matches
   88
  63
   28
  92
  68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   32
   Local Similarity
   96
   61
  36
   4
  8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ 62
   RMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 108
   SPPVALRELIEELSNITQDQKTSLCNSSMVWSVDLTAGGFCAALESLTNISSCNAIHRTQ 87
  RILNGLCNQK-ASDVASS-PPDTKIEVAQFISKLLNYSKQLFRYGH
   TLKELIEELSNITQDQTPLCNGSMVWSVDLAAGGFCVALDSLTNISNCNAIYRTQRILHG 91
   TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF
   TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 145
   PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 95
   LCNRKAPTTVSS--LPDTKIEVAHFITKLLSYTKQLFRHGPF 131
  Similarity
   I52290
  interleukin-13
   Zurawski, S.M.; Mosmann, T.R.;
2, 679-687, 1989
   Conservative
  Conservative
  53.0%;
58.5%;
   54.3%;
  MUID:89093958
  18;
  16;
  Score 294.5; DB Pred. No. 5.2e-24
   Score 302; DB
Pred. No. 8.4e
  Mismatches
  Mismatches
  02-Aug-1996 #text_change 16-Jul-1999
   DB 2;
3.4e-25;
   Zurawski,
   DB 2;
   23;
  and analysis of IL-13 gene expressi
  Length
   Length
  Indels
   G
  131;
  ω
••
   2
  Gaps
  ω
   ۲,
   Q
  DЬ
  δÃ
   QY
  밁
  Вþ
   A; Experimental source:
  JQ1176
   RESULT
  FEBS Lett.
   R; Lynn,
  Matches
  Genetics:
```

```
sepiapterin reductase (EC 1.1.1.153) - human
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 21-Jul-2000
C;Accession: JQ1176; PH1579; I51849
C;Accession:
   A;Residues: 1-5032 <ZOR>
A;Cross-references: GB:J05200; NID:g337721; PIDN:AAA60294.1; PID:g337722 R;Otsu, K.; Phillips, M.S.; Khanna, V.K.; de Leon, S.; MacLennan, D.H. Genomics 13, 835-837, 1992
  R;Ichinose, H.; Katoh, S.; Sueoka, T.; Titani, K.; Fujita, K.; Nagatsu, T. Biochem. Biophys. Res. Commun. 179, 183-189, 1991
A;Title: Cloning and sequencing of cDNA encoding human sepiapterin reductase-an A;Reference number: JQ1176; MUID:91354248
  C; Superfamily: ryanodine receptor; transcription initiation factor sigma region C; Keywords: calcium channel; homotetramer; phosphoprotein; skeletal muscle; transF;1788-1984/Domain: transcription initiation factor sigma region 1 homology <SR1
   R:Zorzato, F.; Fujii, J.; Otsu, K.; Phillips, M.; Green, N.M.; Lai, F.A.; Meissner, G. J. Biol. Chem. 265, 2244-2256, 1990
A;Title: Molecular cloning of cDNA encoding human and rabbit forms of the Ca(2+) rele A;Reference number: A35041; MUID:90130482
  C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jan-2000
C;Accession: A35041; I84622; S66630
                              A; Molecule type: mRNA
A; Residues: 1-261 <ICH>
  A; Accession: JQ1176
   A;Gene: GDB:RYR1
A;Cross-references: GDB:120359;
A;Map position: 19q13.1-19q13.1
   A; Title: Isolation and partial cloning of ryanodine-sensitive Ca(2+) release A; Reference number: S66630; MUID:96032536 A; Accession: S66630
   A;Title: Refinement of diagnostic assays for a probable causal mutation for A;Reference number: I46644; MUID:92347887
A;Accession: I84622
  A; Introns: 642/2
   A; Experimental source:
   A; Molecule type: mRNA
A; Residues: 4690-4968
  A;Cross-references: GB:M91455; NID:g3377723; PIDN:AAA60295.1; PID:g553643
   A; Molecule type: DNA
A; Residues: 598-722
   A; Molecule type: mRNA
  A; Status: preliminary; not compared with conceptual translation
  ryanodine receptor type 1, skeletal muscle - human N; Alternate names: calcium release channel protein
  A;Status: translated from GB/EMBL/DDBJ
   A; Accession: A35041
   Cross-references: GB:M76231;
  Best Local
  Query Match
  641 TSI
  581 HIKSIISLLDKHGRNHKVLDVLCSLCVCNGVAVRSNQDLITENLLPGRELLLQTNLINYV
   101 RGV 103
   521 LYELLASLIRGNRSNCALFSTNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 580
  57 AIQ-----
   9 LKELIEELVNITQNQASLCNGSMVWSVN-----
  S.; Morgan, J.M.; Lamb,
tt. 372, 6-12, 1995
   4690-4968
   598-722 <RES>
  Similarity 21.1 26; Conservative
   <LYN>
  myometrial smooth muscle
   RTQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
   12.9%; Score 72; DB 1; 21.1%; Pred. No. 1.1e+02;
NID:g338020; PIDN:AAA60314.1; PID:g338021
  26; Mismatches
   ----LTAGMYCAALES--LINVSDCS 56
   Length 5032
  Indels
  Gaps
  640
  <SR1>
  porcine
   channel
  4.
   enzym
   hom
```

m

s.

```
A;Cross_references: GB:M36410; NID:g206895; PIDN:AAA42130.1; PID:g206896
R;Oyama, R.; Katoh, S.; Sueoka, T.; Suzuki, M.; Ichinose, H.; Nagatsu, T.; Titani, K.
Babchem. Biophys. Res. Commun. 173, 627-631, 1990
A;Title: The complete amino acid sequence of the mature form of rat sepiapterin reduc
A;Reference number: A36400; MuID:g1083647
A;Accession: A36400
A;Molecule type: protein
A;Residues: 1-32;34;41-92, I',96-124;126-262 <0yA>
R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
A;Title: Detection of a novel sepiapterin reductase mRNA: Assay of mRNA in various ce
A;Reference number: A49174; MuID:g3178546
A;Accession: PH1577
   A,Molecule type: mRNA
A,Residues: 209-255 <a href="Mailto:ARB25506.1">MRISS5545.1</a>; NID:9266077; PIDN:AAB25506.1; PID:9266078
A;Cross-references: GB:S55545; NID:9266077; PIDN:AAB25506.1; PID:9266078
R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.
Adv. Exp. Med. Biol. 338, 195-198, 1993
A;Title: Northern blot analysis of sepiapterin reductase mRNA in mammalian cell lines
A;Reference number: I51849; MUID:94136218
A;Stetus: preliminary; translated from GB/EMBL/DDBJ
  A, Description: catalyzes the NADPH-dependent reduction of sepiapterin to produce 7,8-
   C;Accession: T00035
R;Sasaki, J.; Nakashima, N.; Saito, H.; Noda, H.
Virology 244, 50-58, 1998
A;Title: An Insect picorna like virus, Plautia stali intestine virus, has genes of A;Reference number: 214072; MUID:98240933
   B.L.; Kaufman,
  C;Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology C;Keywords: acetylated amino end; homodimer; oxidoreductase F;9-200/Domain: short-chain alcohol dehydrogenase homology <SADH> F;1/Modified site: acetylated amino end (Met) #status experimental
  4
   C; Species: Rattus norvegicus (Norway rat)
C; Date: 11-Jan-1991 #sequence_revision 07-Jul-1995 #text_change 01-Dec-2000
C; Accession: A36024, A36400; PH1577; I64799; A49174
R; Citron, B.A.; Milstien, S.; Gutierrez, J.C.; Levine, R.A.; Yanak, B.L.; Ka Proc. Natl. Acad. Sci. U.S.A. 87, 6436-6440, 1990
A; Title: Isolation and expression of rat liver sepiapterin reductase cDNA.
A; Reference number: A36024; MUID:90349631
  21-Jul-2000
   Gaps
  8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  #text_change
   12.8%; Score 71; DB 2; Length 262; 23.5%; Pred. No. 4.8; tive 25; Mismatches 41; Indels
                         75 YAIPTIGSKRDLLACAPTGSGKTIAYLFPILQKLQLHVPGGYR 117
   nonstructural polyprotein - Plautia stali intestine virus
   68 LCSQKPAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG 102
   C.Species: Plautia stali intestine virus
C.Date: 23-Apr-1999 #sequence_revision 23-Apr-1999
  sepiapterin reductase (EC 1.1.1.153) - rat
  A; Molecule type: mRNA
A; Residues: 209-255 <RES>
A; Cros. references: GB:S71374; NID:9557901
C; Function:
  Conservative
  Similarity
   A; Molecule type: mRNA
A; Residues: 4-262 <CIT>
   A; Accession: A36024
   Query Match
Best Local Simil
Matches 24; C
   159
   g
  δ
  QQ
   Qy
  Db
R; Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I.

Exp. Cell Res. 204, 217-222, 1993

A; Title: Detecrizention of a novel seplapterin reductase mRNA: Assay of mRNA in various cells
A; Reference number: A49174; MUD: 93178546

A; Accession: PH1579

A; Molecule type: mRNA
A; Residues: 208-254 <AMIA
A; Residues: 208-254 <AMIA
A; Residues: 208-254 <AMIA
A; Reference number: 151849; MUD: 94136218
A; Title: Northern blot analysis of seplapterin reductase mRNA in mammalian cell lines an A; Reference number: 151849; MUD: 94136218
A; Accession: 151849
A; Accession: 151849
A; Mulecule type: mRNA
A; Residues: 208-254 <RES
A; Comment: This enzyme catalyzes the NADPH-dependent reduction of seplapterin to produce C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
C; Superfamily: ribitol dehydrogenase; short-chain alcohol dehydrogenase homology
C; Superfamily: ribitol dehydrogenase; homology <SADH>
F; 28-139/Domain: short-chain alcohol dehydrogenase homology csADH>
F; 28-32/Region: pterin binding #status predicted
  PID:91008436; GSPDB:GN00066; SPDB:SPAC
   RESULT 6
S62423
ATP-dependent RNA helicase - fission yeast (Schizosaccharomyces pombe)
C.Species: Schizosaccharomyces pombe
C.Species: Schizosaccharomyces pombe
C.Species: Schizosaccharomyces pombe
C.Species: Schizosaccharomyces pombe
C.Species: 16-May.1996 #sequence_revision 13-Mar-1997 #text_change 17-Nov-2000
C.Accession: T38183: S62423
R.Lye, G.; Churcher, C.M.; Barrell, B.G.; Rajandream, M.A.; Walsh, S.V.
Submitted to the EMBL Data Library, October 1995
A.Recession: T38183
A.Recession: T38183
A.Recession: T38183
A.Residues: Lanslated from GB/EMBL/DbBJ
A.Residues: 1481 - CAY2
A.Residues: 1481 - CAY2
A.Cross-references: EMBL:254285; PIDN:CAA91073.1; PID:gl008436; GSPDB:GN00066; Si
A.Seperimental source: strain 972h-; cosmid c22F3
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genet
   4 ;
   4
   Gaps
  Gaps
   LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 72
   PSPTLKEL-IEELVNITQNQASLCNGSMVWSV-NLTAGMYCAALESLINVSDCSAIQRTQ 62
  Length 261;
   Length 481;
  RMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYR 105
   41;
   48;
  DB 2;
   DB 2;
   PAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG 102
  4.2;
   Query Match 12.9%; Score 71.5; DE Best Local Similarity 24.3%; Pred. No. 8.5; Matches 25; Conservative 25; Mismatches
  12.9%; Score 71.5; D
llarity 24.7%; Pred. No. 4.2;
Conservative 21; Mismatches
  Query Match
Best Local Similarity
Matches 24; Conserv
```

16

ò

qq ò qq

73

ca

2

ð g ò

18

```
A:Molecule type: DNA
A:Residues: 244-725 <KUM>
A:Residues: 244-725 <KUM>
A:Cross-references: EMBL:D16359; NID:g303761; PIDN:BAA23634.1; PID:g2648161
C:Comment: This protein is found on the inner membrane of the host shortly a C:Comment: The rIIA gene is one of two rII genes, loss of which gives rise to C:Genetics:
A:Gene: rIIA
   A; Molecule type: DNA
A; Residues: 476-725 <HER>
A; Nesidues: 476-725 <HER>
A; Note: the authors translated the codon ACA for residue 517 as
R; Pribnow, D.; Sigurdson, D.C.; Gold, L.; Singer, B.S.; Napoll,
J. Mol. Biol. 149, 337-376, 1981
A; Title: rII cistrons of bacteriophage T4. DNA sequence around t
A; Reference number: A92868; MUID:82078066
A; Accession: A92868
  A; Map position: 0.014-2.189
C; Superfamily: phage T4 rIIA protein
C; Keywords: DNA binding; membrane pro
   R;Daegelen, P.; Brody, E.
Genetics 125, 237-248, 1990
A;Title: The rIIA gene of bacteriophage T4. I.
A;Reference number: PS0194; MUID:90337270
   A;Title: Effects of uvsX, uvsY and DNA topoisomerase A;Reference number: S52613; MUID:94063467 A;Accession: S52613
  A; Molecule type: DNA
A; Residues: 587-615, 'D', 617-725 <PRI>
   R:Sugino, A.; Drake, J.W.
J. Mol. Biol. 176, 239-249, 1984
A:Title: Modulation of mutation rates
A:Reference number: A92909; MUID:84267
A:Accession: A92909
   A;Residues: 1-725 <DAE>
A;Cross-references: GB:X52686; GB:X00905;
R;Sugino, A.; Drake, J.W.
   A;Note: host Escherichia coli
C;Date: 19-Feb-1984 #sequence_revision 03-Oct-1995 #text_change 16-Jun-2000
C;Accession: JU0400; A92909; A92868; S52613; A04304; PS0468; PS0469
   R; Kumagai, M.; Yamashita, T.; Honda, M.; Genetics 135, 255-264, 1993
   A;Cross-references: EMBL:AB006531; NID:g2344756; C;Keywords: polyprotein
   A; Status: preliminary; translation
  A; Note: the authors translated the codon GCT for residue
  A; Molecule type: DNA
   A; Reference number: A; Accession: JU0400
   C; Species: phage T4
   rapid lysis protein N; Alternate names: c
  В
   οy
  DЬ
   Ş
  A; Molecule type: genomic A; Residues: 1-1811 <SAS>
   A; Accession: T00035
A; Status: translated from
    Query Match
Best Local S
   Query Match
Best Local
  Matches
  1040 NYYALFVCRPDGRESRLGHILFLKDKIGYM 1069
   71
   QKPAAGISSERSRDTKIEVIQLVKNLLTYV 100
  IEQSVFNATEDSVNMQCNGNV---ENLALQNYYSKVNEMLTVEGCSDQNAAEILSKVVCR 1039
   IEELV-NITQNQASL-CNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCS 70
Similarity
  Similarity
21; Conserv
   T00035
  binding; membrane protein
  Conservative
   gp rIIA;
  IIA - phage
  RNA
   12.7%;
              12
27
   GB/EMBL/DDBJ
   rIIA
          . 6%;
  MUID:84267841
  23;
  Score 70.5; D
Pred. No. 50;
23; Mismatches
   protein
            Score
Pred.
   not shown
  in bacteriophage
            No.
   Ikeda,
   NID:g15177; PIDN:CAA36911.1;
            DB
20;
  Its DNA sequence and discovery
   DΒ
                              1.
   PIDN:BAA21898.1; PID:g2344757
  41;
   2
                                Length 725;
  g
   Length
  T4
  Indels
  the
  595
  by a
  formation
  as
  the intercistronic
  base-pair
   Lys
C.;
  Ser
  <u>ن</u>
   Brosius,
  Gaps
  of tandem
   PID:g15179
  change a
  ç
   after infect:
   J.;
  ω
--
  large,
  of a
  duplica
   Dull,
  dozen
  divid
  new
                            δÃ
```

Matches

w

Local

23; Conser

Conservative

26;

Mismatches

46;

Indels

12;

Gaps

4;

Score 69; Pred. No.

DB 2;

Length 261

12.4%; 21.5%;

```
A;Cross-references: GB:S77493; NID:g957229; PIDN:AAB33611.1; R;Maier, J.; Schott, K.; Werner, T.; Bacher, A.; Ziegler, I. Exp. Cell Res. 204, 217-222, 1993
A;Title: Detection of a novel sepiapterin reductase mRNA: Ass A;Reference number: A49174; MUID:93178546
A;Accession: PH1578
A;Accession: PH1578
A;Molecule type: mRNA
A;Residues: 209-255 < WAI>
C;Comment: This enzyme catalyzes the reduction of both C1′ and C;Superfamily: ribitol dehydrogenase; short-chain alcohol deh
   sepiapterin reductase (EC 1.1.1.153) - mouse C;Species: Mus musculus (house mouse) C;Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 C;Accession: S52110; pH1578 R;Ota, A.; Ichinose, H.; Nagatsu, T. Biochim. Biophys. Acta 1260, 320-322, 1995
C: Keywords: oxidoreductase F: 9-200/Domain: short-chain alcohol dehydrogenase
  A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-261 <OTA>
  A;Title: Mouse sepiapterin reductase: an A;Reference number: S52110; MUID:95178553
   RESULT
S52110
   acrosin (EC 3.4.21.10) precursor - rabbit c;Species: Oryctolagus cuniculus (domestic rabbit) C;Date: 26-Dec-1994 #sequence_revision 10-Nov-1995 C;Accession: S47538 R;Richardson, R.T.; O'Rand, M.G.
  A; Reference number: A; Accession: S52110
  뫄
   8
  A;Cross-references: EMBL:U05204; NID:g451841; PIDN:AAA61630.1; C;Superfamily: acrosin; trypsin homology C;Keywords: glycoprotein; hydrolase; serine proteinase F;40-283/Domain: trypsin homology <TRY>
  R;Richardson, R.T.; O'Rand, M.G.
Biochim. Biophys. Acta 1219, 215-218, 1994
A;Tit.Le: Cloning and sequencing of CDNAs for
A;Reference number: S47538; MUID:94368861
  Š
   QУ
  A; Molecule type: mRNA
A; Residues: 1-431 <RIC>
  A; Reference number: A; Accession: $47538
  Вb
  В
  Matches
   Query Match
Best Local
   Matches
  190 PSPTLMEARVDLINL----ELCNSTQWYNGRITASNLCAGYPS
  342
  67
  5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALES
   œ
  ALCSOKPAAGISSERSRDTKIE-VIQLVKNLLTYVRGVYR 105
   TTKNLSYKKMQSMFEPDSKLCNAGVVYEVNLD-----PRLKRIKQSHETSAVASSYRLF-
   TLKEL-IEELVNITONQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLK 66
  reductase (EC 1.1.1.153) - mouse
   16;
   27;
   Similarity
  ---GINT----TKINIVIDNIKNRVNIVRGLAR
   Conservative
   Conservative
   12.5%;
   20;
   Score 69.5;
Pred. No. 12;
   Mismatches
   Mismatches
   enzyme
   rabbit preproacrosin
   DΒ
   involved
   2;
  homology <SADH
   16;
   31;
   #text_change 18-Feb-2000
  421
   #text_change 22-Jun-1999
   Length
  48
   Indels
   Indels
   'n
   Assay
   dehydrogenase homology
   and C2' oxo
   the
  PID:g957230
  PID: 9451842
   of.
   final step of tetrahy
   22;
   5.
  and
   mRNA
   Gaps
  þ
   group
  in
  novel
   various
   5
   preproa
```

```
National channel conformation of the conformat
   A;Note: part of this sequence was confirmed by protein sequencing R;Zorzato, F.; Fujii, J.; Otsu, K.; Phillips, M.; Green, N.M.; Lai, F.A.; Meissner, G J. Biol. Chem. 265, 2244-2256, 1990 A;Title: Molecular cloning of cDNA encoding human and rabbit forms of the Ca(2+) rele
  A; Introns: 527/1; 559/1; 598/3; 643/2; 1570/3; 1646/2; 1850/3; 1939/3; 2006/3; 2044/1 A;Note: the list of introns may be incomplete C;Superfamily: ryanodine receptor; transcription initiation factor sigma region 1 hom C;Keywords: calcium channel
  A; Modecule type: mRNA; protein
A; Residues: 'X',1223-1235,'XX',1238-1251;1334-1348;1566-1569,'X',1571,'X',1573;1597-1
-4679,'X',4681-4689,'X',4691-4693,'X',4695,'X',4697-4700 cAAR>
A; Note: the proteolytic fragments sequenced here from the junctional channel complex R; Varsany1, M.; Meyer, H.E.
Biol. Chem. Hoppe-Seyler 376, 45-49, 1995
  A; Molecule type: mRNA
A; Residues: 1-66, Y', 68-2014, 'D', 2016-3246, 'E', 3248-3480, 3486-4497, 'LE', 4498-4521, 'Q', 4748-4758, 'W. '4760-5037 < 20R>
*4748-4758, 'W. '4760-5037 < 20R>
*R: Marks, A.R.; Tempst, P.; Hwang, K.S.; Taubman, M.B.; Inui, M.; Chadwick, C.; Fleisc Proc. Natl. Acad. Sci. U.S.A. 86, 8683-8687, 1989
Proc. Natl. Acad. Sci. U.S.A. 86, 8683-8687, 1989
A;Title: Molecular cloning and characterization of the ryanodine receptor/junctional
  A, Title: A brain-specific transcript from the 3'-terminal region of the skeletal musc
   A;Status: nucleic acid sequence not shown; not compared with conceptual translation
  Biol. Chem. Hoppe-Seyler 376, 45-49, 1995
A:Title: Sarcoplasmic reticular Ca(2+) release channel is phosphorylated at serine
A:Reference number: S53794; MUID:95336639
  4;
   A;Cross-references: EMBL:U15965; NID:g562095; PIDN:AAA60467.1; PID:g562096
C;Genetics:
A;Gene: RYR1
   57 AIQ------RIQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
   522 LYEILASLIRGNRANCALFSNNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 581
  Gaps
  26
  -LTAGMYCAALES -- LINVSDCS
  A;Molecule type: mRNA
A;Residues: 1-5037 <TAK>
A;Cross-references: EMBL:X15750; NID:g1709; PIDN:CAA33762.1; PID:g1710
  28;
  Ē
  Length 5035;
  A; Molecule type: protein
A; Residues: 2841-2852 < VAR>
A; Residues: 2841-2852 < VAR>
R; Takeshima, H; Nishimura, S; Nishi, M.; Ikeda, M.; Sugimoto,
FEBS Lett. 322, 105-110, 1993
  44; Indels
  Score 69; DB 1;
Pred. No. 2.4e+02;
   A; Status: not compared with conceptual translation
  26; Mismatches
   A; Reference number: A35041; MUID: 90130482
   A;Reference number: A36181; MUID:90046857
A;Accession: A36181
  LKELIEELVNITQNQASLCNGSMVWSVN-
   muscle -
  12.4%;
20.3%;
   Query Match
Best Local Similarity 20.3%
Matches 25; Conservative
   ryanodine receptor, skeletal
                A; Molecule type: mRNA
A; Residues: 516-676 <LED>
  A; Accession: B35041
  A; Accession: S04654
  101 RGV 103
  642 TSI 644
   6
   ద
  g
  δy
   ò
  ŏ
   g
  Tyanodine receptor, skeletal muscle - pig
NyAlternate names: calcium release channel protein
Cispecies: Sus scrofa domestic pig)
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 10-Sep-1999
Cibate: 10-Sep-1999 #sequence_revision 146645
Airtle: 1dentification of a mutation in porcine ryanodine receptor associated with malification of an utation in porcine ryanodine receptor associated with malification in 46646
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle: 10-Sep-1999
Airtle:
  пe
  A,Accession: I47133
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Nolecule type: mRNA
A;Residues: 2-2091,'A,'2093-3494,'L',3496-4163,'S',4165-4182,'R',4184-4411,'W',4413-4971
A;Cross-references: EMBL:X62880; NID:gJ936; PIDN:CAA44674.1; PID:gJ937
B;Harbitz, I; Kristensen, T.; Kran, T.; Davies, W.
Submitted to the EMBL Data Library, August 1992
   S.; Gustavs
   A,Title: DNA sequence of the skeletal muscle calcium release channel cDNA and verificat
   .a⊟
   gene
  (RYR1)
   A:Residues: 4785-4971, R',4973-5035 <HA2>
A:Cross-references: GB:M32501; NID:g164428; PIDN:AAA31022.1; PID:g164429
R:Ledbetter, M.W.; Preiner, J.R.; Louis, C.F.; Mickelson, J.R.
A:Titcher Chem. 259, 31544-31551, 1994
A:Title: Tissue distribution of ryanodine receptor isoforms and alleles determined by A:Reference number: A55660; MuID:95081095
  for the
  A:Status: preliminary; translated from GB/EMBL/DDBJ
A:Status: preliminary; translated from GB/EMBL/DDBJ
A:Status: 1-614,'C',616-5035 cFU2>
A:Residues: 1-614,'C',616-5035 cFU2>
A:Cross-references: GB:M91451; NID:g164645; PIDN:AAA31118.1; PID:g164646
R:Leeb, T.; Brem, G.; Brenig, B.
submitted to the EMBL Data Library, November 1992
A;Description: Genomic organization of porcine skeletal muscle ryanodine receptor A;Reference number: S31395
  A;Title: Genomic organization of the porcine skeletal muscle ryanodine receptor A;Reference number: A48915; MUID:94117003
A;Contents: annotation R;Acontents: annotation T; Bosnes, M; Kran, S.; Davies, W. Anim. Genet. 23, 395-402, 1992
   W.; Kaufmann, U.; Kran,
  candidate
99 INNAATLGDVSKGFLNVN----DLAEVNNYWALNLTS-MLCLTSGTLNAFQDSPGLSKTV 153
  A Molecule type: DNA
A Residues: 482-706 cHAM>
A Cross-references: EMBL:x68247
R:Harbitz, I.; Chowdhary, B.; Thomsen, P.D.; Davies, W.; Kaufmann, &
Genomics 8, 243-248, 1990
A:Title: Assignment of the porcine calcium release channel gene, a chance number: A37105; MUID:91065640
   154 VNISSLCALOPYKGWGLYCAGKAARDMLYQVLAAEEPSVRVLSYAPG 200
   RMLKALCSQKPAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG 102
  A;Status: preliminary; translated from GB/EMBL/DDBJ
  m
m
  G.; Brenig,
  A; Reference number: 147133; MUID: 93036581
   A; Molecule type: DNA
A; Residues: 1542-2643 <LEE>
A; Cross-references: EMBL:X69465
R; Leeb, T.; Schmoelzl, S.; Brem,
Genomics 18, 349-354, 1993
   A;Reference number: S26624
A;Accession: S26624
  A;Status: preliminary
  A; Accession: S31395
음
  QQ
  à
```

```
F;4564-4580/Domain: transmembrane #status predicted <TM1>
F;4664/Domain: transmembrane #status predicted <TM2>
F;4631-4664/Domain: transmembrane #status predicted <TM2>
F;4918-4937/Domain: transmembrane #status predicted <TM4>
F;4918-4937/Domain: transmembrane #status predicted <TM4>
F;4918-4937/Domain: transmembrane #status predicted <TM4>
F;128,286/Binding site: phosphate (Thr) (covalent) (by cAMP- and calmodulin-dependent ki F;2843/Binding site: phosphate (Ser) (covalent) #status experimental F;4864/Binding site: carbohydrate (Asn) (covalent) #status predicted
   A:Map position: 5R
C:Superfamily: deubiquinating enzyme
C:Keywords: hydrolase
  A;Cross-references: EMBL:U18917; NID:g603377; PIDN:AAB64671.1; PID:g603384; MIPS:YER144cC;Genetics:
  submitted to the EMBL Data Library, December 1994 A; Description: The sequence of S. cerevisiae cosm A; Reference number: S50647
   C:Superfamily: ryanodine receptor; transcription initiation factor sigma region 1 homold (Reywords: calcium channel; glycoprotein; phosphoprotein; skeletal muscle; transmembran F:699-704/Region: adenine nucleotide binding F:841-954,955-1068/Region: 114-residue repeats F:1344-1359,1371-1386/Region: 16-residue repeats F:1389-1985/Domain: transcription initiation factor sigma region 1 homology <SR1> F:270-2375/Region: adenine nucleotide binding F:2755-2844,2845-2958/Region: 120-residue repeats
  A; Molecule type: DNA
A; Residues: 1-805 <DIE>
  R;Xiao, W.; Fontanie, T.; Tang, M.
Yeast 10, 1497-1502, 1994
A;Title: UBP5 encodes a putative yeast ubiquitin-specific protease that
A;Reference number: S50277; MUID:95176708
  C;Species: Saccharomyces cerevisiae
C;Date: 01-Aug-1995 #sequence_revision 01-Sep-1995 #text_change 29-Sep-1999
C;Date: 05-27; S50647
C;Accession: S50277; S50647
   A; Cross-references: SGD: S0000946; MIPS: YER144c
   A; Gene: SGD: UBP5
  A; Molecule type: DNA. A; Residues: 1-805 < XIA>
   Š
   ᄝ
   Š
  В
   A; Accession: S50647
   R; Dietrich, F.S.
   A;Cross-references: EMBL:U10082; NID:g595376; PIDN:AAC48928.1; PID:g595377
   덩
  δ
  A; Molecule type: mRNA
A; Residues: 4163-5037 <TAW>
  N; Alternate names: protein YER144c
   ubiquitin-specific proteinase UBP5 (EC 3.4.-.-) - yeast (Saccharomyces cerevisiae)
                             Query Match
Best Local :
  Matches
   Matches
  Query Match
Best Local
   642 TSI
   101 RGV 103
  522 LYELLASLIRGNRANCALFSTNLDWVVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 581
  582 HIKSIISLLDKHGRNHKVLDVLCSLCVCNGVAVRSNQDLITENLLPGRELLLQTNLINYV 641
  57 AIQ----
  Local
   9 LKELIEELVNITQNQASLCNGSMVWSVN------LTAGMYCAALES--LINVSDCS 56
   26;
                    Similarity
   Similarity
   S32504
  Conservative
   Conservative
   S32504; MUID: 93245969
   RTQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
                             12.2%;
22.5%;
  12.4%;
21.1%;
   25;
  22;
                          Score 68; DB Pred. No. 36;
   Score 69; DB 2;
Pred. No. 2.4e+02;
  Mismatches
  Mismatches
  cosmids 8229, 9115,
  2;
  44; Indels
  Length 5037;
  Length 805
  Indels
20;
   9132, 9981,
  Gaps
   is related
  and lambda
   4;
  ៥
  ₽
```

Search completed: May 13, Job time: 26257 sec

2001,

21:48:48

¥

```
A; Accessor type: DNA
A; Molecule type: DNA
A; Residues: 1-936 <WER>
A; Cross-references: EMBL: Z28348; NID: g454254; PIDN: CAA82202.1; PID: g454255
A; Cross-references: Strain FL100
  C;Superfamily: unassigned fork head proteins; fork head DNA-binding C;Keywords: DNA binding; nucleus; transcription regulation F;461-549/Domain: fork head DNA-binding domain homology <FHD>
   RESULT
S43738
밁
                                       Qγ
   Дb
  Qy
  C; Genetics:
  A; Molecule type: DNA
A; Residues: 1-936 <NEL>
   submitted to the EMBL Data Library, July 1995 A; Description: The sequence of S. cerevisiae A; Reference number: S59764
  A; Reference number: A; Accession: $43738
   submitted to the EMBL Data Library, November 1993 A; Reference number: $\rm S43738
  R; Werner,
  C;Species: Saccharomyces cerevisiae
C;Date: 31-Mar-1992 #sequence_revision 14-Sep-1994 #text_change 24-Sep-1999
C;Accession: S43738; S59769
   밁
  δÃ
  밁
   ρ
   A; Map position: 16R
  A; Cross-references:
   A; Cross-references: EMBL: U32445; NID: g914969; PIDN: AAB68074.1; PID: g914975; MIPS: YPR1
  N; Alternate
  A; Gene: SGD: FHL1
  A; Accession: S59769
  transcription activator FHL1
   Query Match
Best Local
   Matches
672 TALMDKNPQHLNLILAAAVNAATAKVTKGEVKQLV 706
   619 TMKYLQEQLVILTRDRKGL-----SKQVIAAILTQALAMTINQVTQAAKNKGITGNPL 671
  415
  465 VGTHDLVRMFLDNTYLNFINFDSSRGSK---GLLAKNFAILVNNMHRHGAF 512
   Local Similarity
   66 KALCSQKP-----AAGISSERSRDTKIEVIQLV 93
  59
  15
   8
  σ
   TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR--TQRML 65
  QRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
   SPRIPPLPQQ--NLSSSRQTILNNSQVLDLDLIVG-----LENIGNCCYMNCILQCL 464
   SPTLKELIEELVNITQNQASLCNGSMYWSVNLTAGMYCAALESLINVSDC-----SAI
  on activator FHL1 - yeast (Saccharomyces cerevisiae)
  Conservative
  SGD:S0006308; MIPS:YPR104c
   12.2%;
30.5%;
  16;
   Score 68;
Pred. No.
  Mismatches
  DB 2;
43;
  cosmid 8283
  Length 936
  Indels
  16;
   protein YPR104c
   domain
  Gaps
  58
  homology
```

```
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

May 14, 2001, 06:02:08 ; Search time 44.64 Seconds (without alignments) 84.411 Million cell updates/sec Run on:

Title: Perfect score: Sequence:

US-09-451-527-105 556 1 SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR 110

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

93435 seqs, 34255486 residues Searched: Total number of hits satisfying chosen parameters:

93435

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. SwissProt\_39:\* Database :

|           |        | Description | homo sapien | bos taurus | mus musculu | rattus norv | homo sapien | homo sapien |            | rattus norv | bacteriopha | salmonella | oryctolagus | mus musculu | sus scrofa | oryctolagus | saccharomyc | saccharomyc | saccharomyc | trypanosoma | oryctolagus | thermotoga | rhizobium 1 | rattus norv | sus scrofa | xenopus lae | zymomonas m | mus musculu | autographa | saccharomyc | mycobacteri | rattus norv | saccharomyc | rhizobium m | caenorhabdi |
|-----------|--------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
|           |        | crip        | 35225       | 8v9        | 109         | 203         | 317         | 270         | 775        | 297         | 9           | 222        | 338         | 105         | 960        | 116         | 944         | 521         | 353         | 531         | 370         | 925        | 528         | 946         | 348        | 980         | 758         | 738         | 929        | 290         | 380         | 720         | 159         | 352         | 6012        |
|           |        | Desc        | P35.        | 608x60     | P20109      | P42203      | P21817      | P35         | 009775     | P18.        | P03690      | 05222      | P48038      | 064105      | P16        | P11.        | P39944      | P39         | P38         | P12         | P01870      | P74925     | 033         | P14046      | P06348     | P25980      | P06758      | 060738      | P24        | P53(        | P96380      | 062720      | P18759      | , z 60      | P46(        |
| ES        |        | 1 1 1 1 1   |             |            |             |             |             |             |            |             |             |            |             |             |            |             |             |             |             |             |             |            |             |             |            |             |             |             |            |             |             |             |             |             |             |
| SUMMARIES |        |             | HUMAN       | VIN        | OUSE        | Ţ           | JMAN        | IMAN        | HPO        | 턴           | ъТ.         | \LTY       | BIT         | OSE         | 9          | BIT         | AST         | AST         | AST         | X BB        | E           | EMA        | ILE         | 5           |            | NLA         | MAG         | USE         | 'AC        | AST         | DI:         | Ħ           | AST         | IΜE         | _CAEEL      |
| SUM       |        |             | 11.13_HL    | IL13_BOVIN | IL13_MOUS   | IL13_RAT    | RYNR_HUMAN  | SPRE_HUMAN  | YA88_SCHPO | SPRE_RAT    | VR2A_BPT4   | FLHC_SALTY | ACRO_RABIT  | SPRE_MOUSE  | RYNR_PIG   | RYNR_RABIT  | UBP5_YEAST  | FHL1_YEAST  | KEL1_YEAST  | TOP2_TRYBB  | GC_RABIT    | MUTL_THEMA | DNAK_RHILE  | Ali3_RAT    | H1T_PIG    | UBF2_XENLA  | ADH2_ZYMMO  | ZNT1_MOUSE  | PTP_NPVAC  | YGZ1_YEAST  | MFD_MYCTU   | ZNT1_RAT    | SC18_YEAST  | G6PD_RHIME  | KI5_C/      |
|           |        | Ξį          |             |            |             |             |             |             |            |             |             |            |             |             |            |             |             |             |             |             |             |            |             |             |            |             |             |             |            |             |             |             |             |             | <b>&gt;</b> |
|           |        | B           |             |            |             |             |             |             |            |             |             |            |             |             |            |             |             |             |             |             |             |            |             |             |            |             |             |             |            |             |             |             |             |             |             |
|           |        | Length      | 132         |            |             |             |             |             |            |             | 725         | 192        | 431         | 261         | 5035       | 5037        | 805         | 936         | 1164        | 1221        | 323         | 510        | 638         | 1477        | 211        | 701         | 382         | 203         | 168        | 1004        | 1234        | 507         | 758         | 491         | 95.5        |
|           |        | નુ :        | 0           | =          | 'n          | 0           | 6           | ο.          | 6.         | ω.          | ٠           | 'n.        | 'n          | 4.          | 4.         | 4.          | 7           | 7           |             | Ξ.          | 0           | ω.         | 80          | 7.          | 9          | 9           | 'n          | 'n          | 4          | 4           | 7           | <u>س</u>    | ٠           | ~!          | •           |
| d         | Query  | Mat         | 99          | 62         | 54          | 23          | 12          | 17          | 12         | 17          | 17          | 17         | 12          | 12          | 12         | 17          | 17          | 17          | 12          | 12          | 12          | 7          | 11.         | 7           | 7          | Ξ           | Ξ           | 1           | 11         | 7           | Ξ.          | Ξ.          | Ξ;          | Π;          | 7           |
|           |        | Score       | 367         | 345        | 302         | 294.5       | 72          | 71.5        | 71.5       | 71          | 70          | 69.5       | 69.5        | 69          | 69         | 69          | 89          | 68          | 67.5        | 67          | 66.5        | 65.5       | 65.5        | 65          | 64.5       | 64.5        | 64          | 64          | 63.5       | 63.5        | 63.5        | 63          | 63          | 62.5        | 67.5        |
|           | Result | ON !        | н           | 7          | m           | 4           | ស           | 9           | 7          | 8           | 6           | 10         | 11          | 12          | 13         | 14          | 15          | 16          | 17          | 18          | 19          | 20         | 21          | 22          | 23         | 24          | 25          | 26          | 27         | 28          | 29          | 30          | 31          | 32          | 33          |

| vibrio para<br>escherichia | bacillus su      | escherichia | mus musculu<br>xenopus lae | xenopus lae | saccharomyc | gallus gall | saccharomyc |
|----------------------------|------------------|-------------|----------------------------|-------------|-------------|-------------|-------------|
| Q05939<br>P11165           | P37945<br>019954 | P24177      | P9/929<br>P52171           | P25979      | 012175      | 886060      | P13433      |
| TOXS_VIBPA<br>FLHC ECOLI   | LON1_BACSU       | ACRD_ECOLI  | BRCZ_MOUSE<br>IMA2_XENLA   | UBF1_XENLA  | MSH5_YEAST  | SCILCHICK   | RPOM_YEAST  |
| ~ ~                        | ~ ~              | Н,          |                            |             | Н           | Н           | Н           |
| 171                        | 774<br>830       | 1037        | 522                        | 677         | 901         | 1189        | 1351        |
| 11.2                       | 11.2             | 11.2        | 11.1                       | 11.1        | 11.1        | 11.1        | 11.1        |
| 62<br>62                   | 62               | 62          | 61.5                       | 61.5        | 61.5        | 61.5        | 61.5        |
| 34<br>35                   | 36<br>37         | 38          | 40                         | 41          | 43          | 44          | 45          |

## ALIGNMENTS

| 01-FEB-1994 (Rel. 28, Last sequence update) 01-OCT-2000 (Rel. 40, Last sequence update) 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/13 OR NC30 11/14 OR DECORDED TO THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR THE TOWN OR T |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

```
RESULT
IL13_BC
IL
AC QS
DT 30
   Š
  STITE TO THE TENT OF THE TENT 
   ₽
  밁
  Ş
   Query Match
Best Local
   Matches
IL13_BOVIN
Q9X5V9;
30-MAY-2000
  CONFLICT
CONFLICT
  CARBOHYD
CARBOHYD
VARIANT
   DISULFID DISULFID CARBOHYD
   BOVIN
  Cytokine;
SIGNAL
   EMBL; L06801; AAA36107.1; --
EMBL; X69079; CAA48824.1; --
EMBL; X69079; CAA48823.1; ALT_INIT.
EMBL; U31120; AAB01681.1; --
EMBL; U10307; AAA83728.1; --
  This SWI
  Heinzmann A., Mao X.-Q., Akaiwa M., Kreomer R.T., Gao P.-S., Ohshima K., Umeshita R., Abe Y., Braun S., Yamashita T., Roberts M.! Sugimoto R., Arima K., Arinobu Y., Yu B., Kruse S., Enomoto T., Dake Y., Kawai M., Shimazu S., Sasaki S., Adra C.N., Kitaichi M., Dake Y., Kawai M., Shimazu S., Sasaki S., Adra C.N., Kitaichi M., Inoue H., Yamauchi K., Tomichi N., Kurimoto F., Hamasaki N., Inoue H., Yamauchi K., Tomichi N., Kurimoto F., Hamasaki N., Hopkin J.M., Izuhara K., Shirakawa T., Deichmann K.A.; "Genetic variants of II.-13 signalling and human asthma and atopy."; Hum. Mol. Genet. 9:549-559(2000).

Hum. Mol. Genet. 9:549-559(2000).

SYNERGIZES WITH ILZ IN REGULATING INFLAMMATORY CAMMA SYNTHESIS.

MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES.

INDEXENDED TO A CONTROL OF THE ARMATORY AND IMMUNE RESPONSES.
   the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
  SEQUENCE
   CARBOHYD
  InterPro; IPR001325; - PROSITE; PS00838; INTER
   EMBL; AF043334; AAC( PIR; A47481; A47481)
  CHAIN
   or send an email to license@isb-sib.ch).
   entities
   VARIANT GLN-130.
MEDLINE-20164293;
  InterPro;
   82
   61 TORMLKALCSOKPAAG-ISSERSRDTKIEVIOLVKNLLTYVRGVYRHGNF 109
  22
  N
  SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY
   ASTHMA DEVELOPMENT
   POLYMORPHISM: GLN AT POSITION 130 IS A SIGNIFICANT
   3ITR; 15-JAN-95.
3ITS; 26-JAN-95.
   TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF
  SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EM
   AF043334; AAC03535.1; -.
   Similarity
76; Conserv
   requires a license agreement (See http://www.isb-sib.ch/announce/
  Glycoprotein;
  (Rel.
   Conservative
  1
21
48
64
38
38
49
57
72
  45
87
98
  ĀΑ;
  STANDARD;
    39, Created)
  INTERLEUKIN_4_13; 1.
  PubMed=10699178;
  132
76
90
38
49
57
72
130
  45
87
98
14319
   66.0%;
  Signal;
  MW;
  Score 367; DB 1;
Pred. No. 4.3e-33;
l1; Mismatches 21
   A -> R (IN REF. 4).
S -> G (IN REF. 5).
MISSING (IN REF. 4).
; 123F1DCAB87FD78B CRC64;
  N-LINKED
R -> Q.
   N-LINKED
   N-LINKED
  INTERLEUKIN-13
   /FTId=VAR_010037.
  PRT;
  3D-structure; Polymorphism
  132 AA
   (GLCNAC.)
(GLCNAC.)
(GLCNAC.)
(GLCNAC.
   There are no restrictions ng as its content is in
   21;
   Usage
   . . . .
   Length 132;
   Indels
  (POTENTIAL).
(POTENTIAL).
   ьy
   RISK
   131
   and for
  EMBL outstation
   Roberts M.H.,
  RESPONSES
  a collaboration
   FACTOR FOR
  Gaps
   in no way
  on
  2
```

```
RESULT 3
 Š
  δÃ
   g
  Query Match
Best Local
  Matches
  IL13_MOUSE STAN
P20109;
01-FEB-1991 (Rel. 1
01-FEB-1991 (Rel. 1
15-JUL-1998 (Rel. 3
INTERLEUKIN-13 PREC
   DISULFID
DISULFID
CARBOHYD
CARBOHYD
  CARBOHYD
CARBOHYD
   Cytokine;
SIGNAL
SEQUENCE FROM N.A. MEDLINE=89093958;
  Eukaryota; Metazoa;
Mammalia; Eutheria;
  entities requires a license agreement (See http://www.isb-sib.ch/announce) or send an email to license@isb-sib.ch).
   the European Bioinformatics Institute. There are no rest
use by non-profit institutions as long as its content
modified and this statement is not removed. Usage by ar
  Buitkamp J., Jann O., Fries R.;
"The bovine interleukin-13 gene: genomic organization, location and evolution of the promoter.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases -: FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE SYNERGIZES WITH IL2 IN REGULATING INTERFERON-GAMMA
  30-MAY-2000 (Rel. 39, Last sequence up 30-MAY-2000 (Rel. 39, Last annotation INTERLEUKIN-13 PRECURSOR (IL-13).
                                      NCBI_TaxID=10090;
  Mus musculus
   CHAIN
  EMBL; AJ132441;
  -i- SUBCELLULAR LOCATION: SECRETED.
  Mammalia; Eutheria;
Bovidae; Bovinae; B
   IL13 OR IL-13
   SEQUENCE
   PROSITE;
   SEQUENCE FROM N.A.
   Eukaryota;
   Bos taurus
  This SWISS-PROT entry is copyright. It is
   NCBI_TaxID=9913;
  81
   60
  21
   H
  BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES (BY SIMILARITY).
   SPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ
  RTQRMLKALCSQKPAA-GISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF
   RTKKMLNALCPHKPSAKQVSSEYVRDTKIEVAQFLKDLLRHSRIVFRNERF
  SPVPSATALKELTEELVNTTQNQKVPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQ
   Similarity
  ; Glycoprotein; 1 20 1 20 21 132 24 48 76 64 90 38 38 49 49 57 57
   PS00838; INTERLEUKIN_4_13; 1.
  the Swiss Institute of Bioinformatics
   Metazoa;
  Conservative
   (Mouse).
  el. 17, Created)
el. 17, Last sequence update)
el. 36, Last annotation update)
el. 36, Last annotation update)
PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
  STANDARD;
   CAB46636.1;
  Bos
 PubMed=2521353
   132
76
90
38
49
57
   Chordata;
Rodentia;
   Chordata;
  Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
   14623 MW;
  62.1%;
64.9%;
   Signal.
  16;
   BY SIMILARITY.
BY SIMILARITY.

N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...) (POT  
N-LINKED (GLCNAC...)
   Score 345; DB 1;
bred. No. 1.1e-30;
   INTERLEUKIN-13.
  BY SIMILARITY
  Sciurognathi;
   Craniata; Vertebrata; Euteleostomi;
  Craniata; Vertebrata; Euteleostomi;
  PRT;
  Mismatches
   131
  update)
   A
   produced through a collaboration
   Muridae;
   databases
  and the
   Length 132;
   Indels
   (POTENTIAL)
  (POTENTIAL)
  (POTENTIAL)
   Murinae; Mus
   restrictions
   PRODUCTION. SYNTHESIS.
  chromosomal
  and
   EMBL
   109
  18
  2
  for commercial
   outstation
   =
  Gaps
  80
   59
   MAY
   no
   9
   Ņ
```

```
RYNR_HUMAN
   DISULFID
  CARBOHYD
   CARBOHYD
  CARBOHYD
  CARBOHYD
   SEQUENCE
   (BY
   CHANNEL)
  SIGNAL
  P21817
   RYNR_HUMAN
   CHAIN
   Best Loca
  88
             qq
   δλ
  Вþ
   ò
  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@libe.ch).
  ij
  Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
   Gaps
Brown K.D., Zurawski S.M., Mosmann T.R., Zurawski G.;
"A family of small inducible proteins secreted by leukocytes are members of a new superfamily that includes leukocyte and iflibroblast-derived inflammatory agents, growth factors, and indicators of various activation processes.";
J. Immunol. 142:679-687(1989).
-i- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION. SYNERGIZES WITH ILZ IN REGULATING INTERFERON-GAMMA SYNTHESIS.
MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
   8 TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA 67
  Lakkis F.G., Cruet E.N.;
"Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13
"Cloning of rat interleukin-13 (IL-13) cDNA and analysis of IL-13
gene expression in experimental glomerulonephritis.";
Blochem. Blophys. Res. Commun. 197:612-618(1993).
-i- FUNCTION: CYTOKINE. INHIBITS INFLAMMATORY CYTOKINE PRODUCTION.
  01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION PROTEIN P600).
   N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
954F93F105713FED CRC64;
  ;
   Query Match 54.3%; Score 302; DB 1; Length 131; Best Local Similarity 58.8%; Pred. No. 5e-26; Matches 60; Conservative 16; Mismatches 24; Indels
   (BY SIMILARITY).
-!- SUBCELLULAR LOCATION: SECRETED.
-!- SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
   68 LCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  BY SIMILARITY. INTERLEUKIN-13.
   STRAIN-SPRAGUE-DAWLEY; TISSUE-Kidney cortex; MEDLINE-94092138; Pubmed-7916615;
  BY SIMILARITY.
BY SIMILARITY.
  131 AA.
  MGD; MGI:96541; III3.
InterPro; IPR001325; -
PROSITE; PS00838; INTERLEUKIN_4_13; 1.
  Cytokine; Glycoprotein; Signal
   14107 MW;
  EMBL; M23504; AAA40149.1; -.
   STANDARD;
  Rattus norvegicus (Rat).
   21
131
79
93
   PIR; E30552; E30552.
HSSP; P35225; 3ITR.
   131 AA;
   SEQUENCE FROM N.A
  NCBI_TaxID=10116;
   IL13 OR IL-13
   IL13_RAT
P42203;
  DISULFID
   DISULFID
  CARBOHYD
   SEQUENCE
  CARBOHYD
   CARBOHYD
   SIGNAL
  CHAIN.
   IL13_RAT
  RESULT
  g
   TO DATE OF THE PART OF THE PAR
         δ
   ζ
  g
```

```
entities and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
   This SWISS-PROT entry is copyright. It is produced through a collaboration
   3;
  between the Swiss Institute of Bioinformatics and the EMBL outstation. The European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wa modified and this statement is not removed. Usage by and for commercial
   3; Gaps
   01-MAY-1991 (Rel. 18, Created)
01-MAY-1991 (Rel. 18, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
RYANODINE RECEPTOR, SKELETAL MUSCLE (SKELETAL MUSCLE CALCIUM RELEASE
  4 TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ 62
   28 SPPVALRELIEELSNITQDQXTSLCNSSMVWSVDLTAGGFCAALESLTNISSCNAIHRTQ 87
SYNERGIZES WITH IL2 IN REGULATING INTERFERON-GAMMA SYNTHESIS.
MAY BE CRITICAL IN REGULATING INFLAMMATORY AND IMMUNE RESPONSES
  INTERLEGUENTI.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. . .) (POTENTIAL).

M. ESOOBCABBDEBC201 CRC64;
   "Molecular cloning of cDNA encoding human and rabbit forms of the Ca2+ release channel (ryanodine receptor) of skeletal muscle sarcoplasmic reticulum.";
   TISSUE-Skeletal muscle;
MEDLINE-90130482; PubMed-2298749;
Zorzato F., Fujii J., Otsu K., Phillips M., Green N.M., Lai F.A.,
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
  VARIANT MH CYS-614.
MEDLINE=92128959; PubMed=1774074;
Gillard E.F., Otsu K., Fujii J., Khanna V.K., de Leon S.,
Derdemezi J., Britt B.A., Duff C.L., Worton R.G., McLennan D.H.;
"A substitution of cysteine for arginine 614 in the ryanodine
   53.0%; Score 294.5; DB 1; Length 131; 58.5%; Pred. No. 3.3e-25; tive 18; Mismatches 23; Indels 3;
   63 RMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGN 108
  |:| ||:|:| |: ::| ||||||| | : || | : ::|:|:|
RILNGLCNQK-ASDVASS-PPDTKIEVAQFISKLLNYSKQLFRYGH 131
  SUBCELLULAR LOCATION: SECRETED. SIMILARITY: BELONGS TO THE IL-4 / IL-13 FAMILY.
   5032 AA.
   BY SIMILARITY.
  SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
  HSSP; P35225; 31TR.
InterPro; IPR001325; -:
PROSITE; PS00838; INTERLEUKIN_4_13; 1.
   Biol. Chem. 265:2244-2256(1990).
   PRT;
  Cytokine; Glycoprotein; Signal
   121
14093 MW;
  EMBL; L26913; AAA16478.1; -.
  Meissner G., Maclennan D.H.;
   62; Conservative
  STANDARD;
   131
80
94
42
53
76
   RYR1 OR RYDR.
Homo sapiens (Human).
  Query Match
Best Local Similarity
  SIMILARITY)
  NCBI_TaxID=9606;
```

causative

of human

malignant hyperthermia.";

```
Lynch P.J., Krivosic-Horber R., Reyford H., Monnier N., Quane K., Adnet P., Haudecoeur G., Krivosic I., McCarthy T., Lunardi J.; "Identification of heterozygous and homozygous individuals with the novel RYRI mutation Cys35Arg in a large kindred."; Anesthesiology 86:620-626(1997).
  Palmucci L.M., Doriguzzi C., Fagerlund T.H., Berg K., Or Bendixen D., Mortier W., Linz U., Muller C.R., McCarthy "Mutations in the ryanodine receptor gene in central cor malignant hyperthermia.";
   VARIANT MH ARG-35. MEDLINE-97219028;
  ped
Hum
[9]
   "Mutation screening of the RYR1 detection of a novel Tyr to Ser associated central cores.";
   Quane K.A., Keating Krivosic-Horber R.,
   Nat.
[6]
  Nat.
   receptor
Genomics
  ryanodine
  MEDLINE-95187158;
  McCarthy
  Cens
  heterogeneity studies.";
Hum. Mol. Genet. 3:471-476(1994).
  Heffron J.J.A., Lehane M., Heytons L., Krivosic-Horber Ellis F.R., Monnier N., Lunardi J., McCarthy T.V.; "Detection of a novel common mutation in the ryanodine
   Quane K.A.,
   MEDLINE-94282042;
   VARIANTS CCD CYS-163 AND MET-403.
MEDLINE-94035118; PubMed-8220423;
Quane K.A., Healy J.M.S., Keating
  malignant hyperthermia.";
Genomics 13:1247-1254(1992).
  VARIANT MH ARG-2433
  "Detection of a novel RYR1 mutation
  Keating
   MEDLINE-951
   8
   'n
   VARIANT MH ARG-341
  McCarthy T.V.
   VARIANT MH SER-522.
MEDLINE-95130087; PubMed-7829078;
  Zhang Y.,
  VARIANT CCD HIS-2434
MEDLINE-94035117; Pu
   VARIANT
   sequence of the ryanodine receptor (RYR1) gene malignant hyperthermia.";
  Gillard E.F., Otsu K., Fujii J., Duff C., de Leon S. Britt B.A., Worton R.G., McLennan D.H.; "Polymorphisms and deduced amino acid substitutions
   DLINE-94035117; PubMed-8220422; ang Y. Chen H.S., Khanna V.K., de Leon S., Phillip happert K., Britt B.A., Brownell A.K.W., Maclennan mutation in the human ryanodine receptor gene assontral core disease."; t. Genet. 5:46-50(1993).
  malignant hyperthermia: implications
  substitution of Arg
  K.E.,
  M.S.,
   23:236-239(1994).
   1s
   receptor is associated with malignant Genet. 3:2181-2186(1994).
  Genet.
  ARG-248,
  Urwyler A., Klausnitzer
  Keating K.E., Manning
  5:51-55(1993).
  potentially ca
751-755(1991).
  Khanna
  3:1855-1858(1994)
  PubMed=9066328;
  PubMed=7881417;
  PubMed=7849712;
   PubMed=8012359;
  8, AND VARIANTS
PubMed=1354642;
   K.E., Healy J.M.S., Manning Krivosic I., Monnier N., Lur
  V.K.,
  for Gly2433 in
  de
  Leon
   gene in malignant mutation in a pedi
  CYS-471;
  B.M.,
  В.м.,
  ŝ
  Ħ
  four malignant hyperthermia
  Lehane
Muller
  Healy J.M.S., Monsieurs
Krivosic-Horber R., Adne
  the human
  Frodis W.,
  for diagnosis and
  LEU-1786
   lng B.M.,
Lunardi J.,
  Phillips
clennan D.
  . C.R.,
   pedigree
  ĺη
  an skeletal muscl
hyperthermia.";
  associated
   hyperthermia:
  individuals with
  s.
  AND
  Britt B.
  Hartung
   ij
   core
  Heffron
   Ording
   Couch
  Khanna V.K.,
  .H.;
  receptor
  the
  CYS-2059
   with
   disease
  Ħ
   Adnet
  coding
   ₽.J.,
  with
   Η.,
  J. J. A.
  gene
   · .
   P.,
```

```
MEDLINE=20081079; PubMed=10612851; Gencik M., Gencik A., Mortier W., "Novel mutation in the RYR1 gene (
  Barone V., Massa O., Intravala E., Bracco A., Di Martino Tegazzin V., Cozzolino S., Sorrentino V.; "Mutation screening of the RYRI gene and identification mutations in Italian malignant hyperthermia families.";
  "Novel mutations at a CpG dinucleotide in the malignant hyperthermia."; Hum. Mutat. 11:45-50(1998).
   Manning B.M., Quane K.A., Lynch P.J., U
Krivosic-Horber R., Censier K., Comi G.
Lunardi J., Muller C.R., McCarthy T.V.;
  "Detection of a novel mutation in the ryanodine receptor Irish malignant hyperthermia pedigree: correlation of the response with the affected and unaffected haplotypes.";
  MEDLINE=97284075; PubMed=9138151;
Keating K.E., Giblin L., Lynch P.
Heffron J.J.A., McCarthy T.V.;
  MEDLINE-98051290; PubMed-9389851; Quane K.A., Ording H., Keating K.E., Manning Bendixen D., Berg K., Krivosic-Horber R., Leh Fagerlund T., McCarthy T.V.; Detection of a novel mutation at amino acid ryanodine receptor in malignant hyperthermia. Br. J. Anaesth. 79:332-337(1997).
   VARIANTS MH LEU-2434 AND HIS-2453.
MEDLINE=99158296; PubMed=10051009;
  Hum.
  Am.
   Vaughan P., Censier K., Bendixen Monsieurs K., Fagerlund T., Wolz
  Manning B.M., Quane K.A., Ording H.,
Lehane M., O'Halloran J., Hartung E.,
Vaughan P., Censier K., Bendixen D.,
  hyperthermia
  hyperthermia families: novel mutations vitro contracture test.";
  Brandt A.,
   VARIANTS MH CYS-2458 AND HIS-2458. MEDLINE=98111378; PubMed=9450902;
  MEDLINE=98163444; PubMed=9497245;
  [11]
VARIANT MH LEU-614.
  VARIANTS MH
   MEDLINE=99415746;
  VARIANTS MH
  (RYR1)
  "Identification of novel mutations in
   VARIANTS MH CYS-2162; HIS-2162;
  VARIANT MH
  'Screening
   ehmann-Horn
   15
SUBUNIT: HOMOTETRAMER (POTENTIAL).

DISEASE: A DEFICIENCY IN THE RYANODINE RECEPTOR MAY BE THE CAUSE OF MALICHANT HYPERTHERMIA (MH) AND OF CENTRAL CORE DISEASE OF MUSCLE (CCD). MH IS AN AUTOSOMAL DOMINANT DISORDER OF SKELETAL MUSCLE AND IS ONE OF THE MAIN CAUSES OF DEATH DUE TO ANESTHESIA. IN SUSCEPTIBLE PEOPLE, AN MH EPISODE CAN BE TRIGGERED BY ALL COMMONLY USED INHALATIONAL ANESTHETICS SUCH AS HALOTHANE AND BY
   MULTAL 15:122-122(2000).

FUNCTION: COMMUNICATION BETWEEN TRANSVERSE-TUBULES AND SARCOPLASMIC RETICULUM. CONTRACTION OF SKELETAL MUSCLE TRIGGERED BY RELEASE OF CA++ FROM SR FOLLOWING DEPOLARI
   T-TUBULES.
   in malignant hyperthermia: genotype-phenotype Hum. Genet. 62:599-609(1998).
  Hum. Genet.
   Genet.
   Genet.
   Genet.
  of
  Schleithoff
   TRP-552
  CYS-2453.
  the ryanodine
   34:291-296(1997).
   36:115-118(1999).
  8:2055-2062(1999).
   PubMed=10484775;
  L.,
   Jurkat-Rott K., Klingler W.,
   wolz W.,
  receptor gene
   P.J.,
   MET-2167
   (R2454C)
  Epplen
   . G.,
  Urwyler A., T., Giblin L.M.,
  Heffron
  Comi G.,
   Quane K.A.,
   Manning B.M., Hei
C R., Lehmann-Horn
  SR FOLLOWING DEPOLARIZATION
  the ryanodine-receptor gene
   Urwyler A., '
3., Adnet P.,
  and
   AND
  ч
   in
   in 105 malignant
d concordance with
   ٠. نو
  J.J.A.,
  Heytens
   MET-2205
   Di Martino
  ryanodine receptor in
   patient with
   Tegazzin
   Lehane
   Tegazzin, Wolz W.,
   Heine R
Horn F.,
  Lynch P.J.,
  correlation.";
  Mueller C.R.,
   the
  614 in
  of
  3
  Baur
  gene
  ₽.
  two
  \mathbf{SI}
   malignant
   the
  C
  the
  in
  novel
   'n
  an
```

S

```
MIM; 182125;
  24;
   STRAIN-972;
  YA88_SCHPO
  SEQUENCE
   Query Match
Best Local S
  MOD_RES
NP_BIND
  DOMAIN
   YA88_SCHPO
   Matches
   g
   δλ
       q
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
   4
  CHIN), THOSE WITH ABNORMAL RESPONSE TO CAFFEINE ALONE OR HALOTHANE ALONE ARE MH EQUIVOCAL (MHE(C) AND MEH(H) RESPECTIVELY).

MISCELLANDOUS: THE CALCIUM RELEASE CHANNEL IS MODULATED BY CA++, ME++, APP, AND CALMODULIN RELEASE CHANNEL ACTIVITY RESIDES IN THE C-TERMINAL REGION WHILE THE REMAINING PART OF THE PROTEIN CONSTITUTES THE 'FOOT' STRUCTURE SPANNING THE JUNCTIONAL GAP BETWEEN THE SR AND THE T-TUBULE. IT IS POSSIBLE THAT THE FOOT STRUCTURE INTERACTS WITH THE CYTOPLASMIC REGION OF THE
   IChinose H., Katch S., Suecka T., Titani K., Fujita K., Nagatsu T.;
"Cloning and sequencing of cDNA encoding human sepiapterin
reductase - an enzyme involved in tetrahydrobiopterin biosynthesis.";
Blochem. Blophys. Res. Commun. 179:183-189(1991).
-!- FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
-!- CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN +
DEPOLARIZING MUSCLE RELAXANTS SUCH AS SUCCINYLCHOLINE. THE CLINICAL ERATURES OF THE WYOPATHY ARE HYPERTHERMIA, ACCELERATED MUSCLE METABOLISM, CONTRACTURES, METABOLIC ACIDOSIS, TACHYCARDIA AND DEATH, IF NOT TREATHD MITH THE POSTSYMARTIC MUSCLE RELAXANT, DANTROLENE. SUSCEPTIBILITY TO MY CAN BE DETERMINED WITH THE "IN YIRO" CONTRACTURE TEST (LYCT): OBSERVIOR THE MANAITURE OF CONTRACTURES INDUCED IN STRIPS OF MUSCLE IISSUE BY CAFFEINE AND HALOTHANE ALONE. PATIENTS WITH NORMAL RESPONSE ARE MY NORMAL
   the European Bioinformatics Institute. There are no restrictions on
  -!-`MISCELLANBOOS: RYANODINE IS AN ALKALOID THAT BINDS TO THE CA-RELEASE CHANNEL IN JUNCTIONAL SR AND MODULATES ITS ACTIVITY.
-!- SIMILARITY: LOCAL & LOW WITH THE NICOTINIC ACETYLCHOLINE RECEPTOR
   57 AIQ------RIQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
   Gaps
   9 LKELIEELVNITQNQASLCNGSMVWSVN------LTAGMYCAALES--LINVSDCS 56
   <
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
   SUBUNIT: HOMODIMER.
SUBCELLULAR LOCATION: CYTOPLASMIC.
DISEASE: DEPRESSED SYNTHESIS OF TETRAHYDROBIOPTERIN MAY PLAY
ROLE IN A VARIETY OF HUMAN DISEASES.
   28;
   DB 1; Length 5032;
  43; Indels
  01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
SEPIAPTERIN REDUCTASE (EC 1.1.1.153) (SPR).
   261 AA.
  26; Mismatches
  43;
   12.9%; Score 72;
  Pred. No
   MEDLINE=91354248; PubMed=1883349;
  DIHYDROPYRIDINE RECEPTOR
  21.18;
   Best_Local Similarity 21.1%
Matches 26; Conservative
   STANDARD;
  (N-ACHR) SUBUNITS.
  Homo sapiens (Human)
  SEQUENCE FROM N.A.
  NCBI_TaxID=9606
   TISSUE=Liver;
  101 RGV 103
   641 TSI 643
   SPRE_HUMAN
  NADPH
   Query Match
  SPRE_HUMAN
   RESULT
   g
  ò
   g
  ò
  g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  4,
SWISS-PROT entry is copyright. It is produced through a collaboration
                            reen the Swiss Institute of Bioinformatics and the EMBL outstation
European Bioinformatics Institute. There are no restrictions on it
by non-profit institutions as long as its content is in no wa
  Gaps
   16 LVNITQNQASLCNGSMV---WSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQK 72
  Lye G., Churcher C.M., Barrell B.G., Rajandream M.A., Walsh S.V.; Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: PUTATIVE ATP-DEPENDENT RNA HELICASE.
-!- SIMILARITY: BELONGS TO THE "DEAD" BOX FAMILY HELICASE.
  12.9%; Score 71.5; DB 1; Length 261; 24.7%; Pred. No. 1.4; Live 21; Mismatches 41; Indels 11
  SIMILARITY).
  Pfam; PF00271; helicase_C; 1.
PROSTIE; PS00039; DEAD_APP_HELICASE; 1.
Hypothetical protein; ATP-binding; RNA-binding; Helicase. NP_BIND 90 97 ATP (POTENTIAL).
  NADP (BY SIMILARITY).
PTERIN BINDING (POTENTIAL).
9C9BF76212826F47 CRC64;
   Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes; Schizosaccharomycetales; Schizosaccharomycetaceae;
   73 PAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG 102
   163 PFKGWALYCAGKAARDMLFQVLALEEPNVRVLNYAPG 199
  PUTATIVE ATP-DEPENDENT RNA HELICASE C22F3.08C.
SPAC22F3.08C.
  01-NVV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
   ACETYLATION (BY
   481 AA
   Schizosaccharomyces pombe (Fission yeast).
   PRT;
   InterPro; IPR002198; -. Pfam; PF00106; adh_short; 1. Oxidoreductase; NADP; Acetylation.
   32 PT
28048 MW;
   EMBL; Z54285; CAA91073.1; -.
   EMBL; M76231; AAA60314.1; -.
  Conservative
   STANDARD;
   InterPro; IPR000629; -. InterPro; IPR001410; -. InterPro; IPR001650; -. Pfam; PF00270; DEAD; 1.
   PIR; JQ1176; JQ1176.
  Schizosaccharomyces.
  261 AA;
   Similarity
   SEQUENCE FROM N.A.
   NCBI_TaxID=4896
```

```
RESULT SPRE RESULT SPRE RAT ID SPRE RAT OL-N. DT   밁
   ş
  밁
  õ
   SQ
   Best Loc
Matches
  Query Match
   entities
or send a
  MOD_RES
   SPRE_RAT
P18297;
01-NOV-1990
  This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was
   SITE
SEQUENCE
   Pfam; PF00106; adh_short; 1.
  EMBL; M36410; AAA42130.1; -. PIR; A36400; A36400.
  SEQUENCE
                          DOMAIN
  Oxidoreductase;
   InterPro;
   Biochem.
  sepiapterin reductase.";
  "The complete amino acid sequence of the mature
   Oyama R., Katoh
  SEQUENCE.
MEDLINE=91083647;
  "Isolation and expression of rat liver sepiapterin Proc. Natl. Acad. Sci. U.S.A. 87:6436-6440(1990).
   Proc.
  Kaufman S
  Citron B.A., Milstien S.,
  NCBI_TaxID=10116;
  Eukaryota; Metazoa;
Mammalia; Eutheria;
  Rattus norvegicus
   SEPIAPTERIN
   01-NOV-1990
01-NOV-1997
  MEDLINE=90349631;
   SEQUENCE FROM N.A.,
  75
   63
  18
   Local
   G
  Chem. Biophys. Res. Commun. 173:627-631(1990)
FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN
   SUBCELLULAR LOCATION: CYTOPLASMIC.
   8
  SUBUNIT: HOMODIMER.
   NADPH
  YAIPTIGSKRDLLACAPTGSGKTIAYLFPILQKLQLHVPGGYR
   RMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYR 105
  PSPTLKEL-IEELVNITQNQASLCNGSMVWSV-NLTAGMYCAALESLINVSDCSAIQRTQ 62
   PQPSIKEKEAKKLQGITKGKAKVTGNNPVDPIEEFPEGILCENLKKQ-NITECTTIQR--
  non-profit institutions as long as its content is in no way d and this statement is not removed. Usage by and for commercial is requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
  25; Conserv
  IPR002198;
   Eutheria;
   196
481 AA;
   (Rel. 16, 0)
(Rel. 16, 1)
(Rel. 35, 1)
REDUCTASE
  Conservative
  Ą,
  STANDARD;
   NADP; Acetylation
  s:
  PubMed=2260974;
   PubMed=2201030;
  (Rat)
   Chordata;
Rodentia;
   199
54026
33
28128
  40
   Sueoka T.,
   AND PARTIAL SEQUENCE
   12.9%;
  Created)
   (EC 1.1.1.153) (SPR).
  Last sequence
   Last annotation
  M.
   Σ
()
  Gutierrez J.C., Levine R.A.,
  25;
   Score 71.5; D
Pred. No. 2.9;
25; Mismatches
  DEAD BOX.
; 872ECAFC106E110A CRC64;
PTERIN BINDING (POTENTIAL). EC992564A0334C61 CRC64;
  ACETYLATION.
NADP (BY SIMILARITY).
   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
   PRT;
  Suzuki M.,
  update)
   262
   update)
   Ā
   .9
   Ichinose
  DВ
  48;
  1;
  form
  Length
   Ή.,
   reductase cDNA.";
  of rat
   Murinae; Rattus
  Nagatsu
   Yanak B.L.,
  481;
  5.
   collaboration
   Gaps
   4;
```

Query Match

12.8%;

Score

71;

В

<u>.</u>

Length 262;

Query Match Best Local Similarity

12.6%; 27.0%;

Score Pred.

70; No.

DB 6.9;

Length 725

```
밁
   Qy
   Вb
   VR2A_BPT4
  RESULT
  Matches
  Best Local
   21-JUL-1986
01-MAY-1992
01-OCT-2000
REPEAT
DNA_BIND
CONFLICT
SEQUENCE
   Pribnow D., Sigurdson D.C., Gold L., Singer B.S. Brosius J., Dull T.J., Noller H.F., Brosius J., Dull T.J., Noller H.F., DNA sequence intercistrons of bacteriophage T4. DNA sequence intercistronic divide and positions of genetic 1 J. Mol. Biol. 149:337-376(1981).

-!- FUNCTION: TRANSCRIBED PRIOR TO REPLICATION. PARTS OF THE REPLICATION COMPLEX AND HAS DNA--!- SUBCELLULAR LOCATION: ON THE INNER MEMBRANE
  VR2A_BPT4
P03690;
   PIR;
  PIR;
  This SWISS-PROT entry is copyright. It is produced through a cobetween the Swiss Institute of Bioinformatics and the EMBL of the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and forentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
  "Modulation of mutation rates in bacteriophage T4 change a dozen nucleotides removed.";
J. Mol. Biol. 176:239-249(1984).
   SEQUENCE OF 476-725 FROM N.A. MEDLINE=84267841; PubMed=6748077;
   SEQUENCE FROM N.A. MEDLINE=90337270; PubMed=2379817;
   Viruses; dsDNA viruses, T4-like phages.
   Early protein;
   EMBL; X52686; CAA36911.1;
  MEDLINE=82078066;
  Sugino A., Drake J.W.,
   of a new open reading frame
Genetics 125:237-248(1990).
   Daegelen P., Brody
  Bacteriophage T4
   RIIA PROTEIN
   REPEAT
  SEQUENCE OF 587-725 FROM N.A.
   "The rIIA gene of bacteriophage T4.
   NCBI_TaxID=10665;
   159
   104
  89
  8
  9
   AFTER INFECTION.
  JU0400;
  A04304; Z2BPA4.
  LCALQPFKGWGLYCAGKAARDMLYQVLAVEEPSVRVLSYAPG
  TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLKA
  LCSQKPAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG
   TLGDVSKGFLNIN----DLAEVNNYWALNLTS-MLCLTTGTLNAFSNSPGLSKTVVNISS
  Similarity
101
481
544
616
725
  (Rel.
  Conservative
   JU0400
   (Rel.
   DNA-binding;
A,
   STANDARD;
  PubMed=6273585;
   40,
  01, Created)
22, Last seq
                        179
559
570
             616
82893
  23.5%;
  Last sequence up
  frame
   no
MW;
   RNA stage;
   25;
   DNA replication; APPROXIMATE.
  between
D -> H (IN REF. 2290FF741-
                        APPROXIMATE.
H-T-H MOTIF
  Pred. No.
   PRT;
2290FE341BB45416
  ed. No. 1.6;
Mismatches
  I. It:
  update)
   Singer B.S.,
   725
  Tailed
   update)
   Its
   B
   DNA sequence 60 and rIIA.";
  ON. THIS PROTEIN FORM
DNA-BINDING PROPERTIES
ANE OF THE HOST SHORTLY
   phages; Myoviridae;
             SIMILARITY).
   Inner membrane;
   41;
   landmarks.";
   around
   200
   102
  bу
  Napoli C
   Indels
  a base-pair
   restrictions
  the
   and discovery
  12;
   for
   Repeat
   collaboration
  ch/announce,
   outstation
  no
  Gaps
   commercia]
   67
  4;
```

Matches

FLHC\_SALTY

ô qq

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
   modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  CATALYTIC ACTIVITY: HYDROLYSIS OF ARG- AND LYS-BONDS; PREFERENTIAL CLEAVAGE ARG-XAA >> LYS-LYS-XAA.
SUBUNIT: HEAVY CHAIN (CATALYTIC) AND A LIGHT CHAIN LINKED BY TWO
  rabbit preproacrosin and a novel
  -i- FUNCTION: ACROSIN IS THE MAJOR PROTEASE OF MAMMALIAN SPERMATOZOA. IT IS A SERINE PROTEASE OF TRYPSIN-LIKE CLEAVAGE SPECIFICITY, IT IS SYNTHESIZED IN A ZYMOGEN FORM, PROACROSIN AND STORED IN THE
  INTERCHAIN (BY SIMILARITY).

INTERCHAIN (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

CHARGE RELAY SYSTEM (BY SIMILARITY).

CHARGE RELAY SYSTEM (BY SIMILARITY).

CHARGE RELAY SYSTEM (BY SIMILARITY).
                                   Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
  SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1; ALSO KNOWN AS THE
  Zymogen; Sperm; Signal.
  12.5%; Score 69.5; DB 1; Length 431; 36.4%; Pred. No. 4.1;
  1C015A4E0BC0C668 CRC64;
  ACROSIN LIGHT CHAIN (BY ACROSIN HEAVY CHAIN (BY
   190 PSPTLMEARVDLINL-----ELCNSTQWYNGRITASNLCAGYPS
  5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALES
   16;
  261 AA
  Hydrolase; Serine protease; Glycoprotein; Z
SIGNAL 1 16 BY SIMILARITY.
CHAIN 17 431 ACROSIN.
   7; Mismatches
  SEQUENCE FROM N.A.
STRAIN=NEW ZEALAND WHITE; TISSUE=Testis;
MEDLINE=94368861; PubMed=8086468;
Richardson R.T., O'Rand M.G.;
"Cloning and sequencing of cDNAs for rabbit preproacrosin-related CDNA.";
Biochim. Biophys. Acta 1219:215-218(1994).
   PRO-RICH.
  PRT;
   InterPro; IPR001254; -.
InterPro; IPR001314; -.
Pfam; PF00089; trypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PROSITE; PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_HIS; 1.
ACROSIN PRECURSOR (EC 3.4.21.10).
  46422 MW;
   EMBL; U05204; AAA61630.1; -. MEROPS; S01.223; -.
   Conservative
  STANDARD;
   33
  DISULFIDE BONDS.
   TRYPSIN FAMILY.
   140
238
431 AA;
  Best Local Similarity
Matches 16; Conserv
   NCBI_TaxID=9986;
  40
   ACROSOME
  SPRE_MOUSE
   ACT_SITE
ACT_SITE
SEQUENCE
  Query Match
   DISULFID
  DISULFID
   DISULFID
   DISULFID
  DISULFID
  DISULFID
   CARBOHYD
   CARBOHYD
  ACT_SITE
   PROPEP
  CHAIN
   RESULT 12
SPRE_MOUSE
   Matches
  ΩI
 õ
   q
  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its muse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
5
  ï
   WITH FLHD IT ACTS AS FLAGELLAR GENES (BY
   Yanagihara S., Iyoda S., Ohnishi K., Iino T., Kutsukake K.;
"Structure and transcriptional control of the flagellar master operon
 Gaps
  Gaps
                                   8 TLKEL-IEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRMLK 66
  polymerase;
  Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae; Salmonella.
22;
  .,
3
   DB 1; Length 192;
   Stydene; SG10643; ThC:
Transcription regulation; Sigma factor; DNA-directed RNA
DNA-binding; Flagella.
Indels
   Indels
  Toguchi A., Harshey R.M.;
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
  31 MVWSVNLTAGMYCAALESLINVSDCS---AIQRTQRMLKALCSQKP 73
  21579 MW; C7334C691ECE3F8D CRC64;
  of Salmonella typhimurium.";
Genes Genet. Syst. 74:105-111(1999).
-i- FUNCTION: TRANSCRIPTIONAL ACTIVATOR. TOGETHER
A COMPOUND SIGMA FACTOR THAT ACTIVATE CLASS 2
31;
   21;
   67 ALCSOKPAAGISSERSRDTKIE-VIQLVKNLLTYVRGVYR 105
  -----GINT----TKINIVIDNIKNRVNIVRGLAR 421
  33, Created)33, Last sequence update)35, Last annotation update)
   30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last Sequence update)
31-CCT-2000 (Rel. 40, Last annotation update)
FLAGELLAR TRANSCRIPTIONAL ACTIVATOR FLHC.
  SIMILARITY).
-!- SIMILARITY: BELONGS TO THE FLHC FAMILY.
  431 AA
   192 AA
   12.5%; Score 69.5; Di 32.6%; Pred. No. 1.6;
20; Mismatches
   7; Mismatches
  or send an email to license@lsb-sib.ch).
  PRT;
   PRT;
   EMBL; AF029300; AAB96640.1; -.
   D43640; BAA85315.1; -.
Conservative
   Conservative
   STANDARD;
  STANDARD;
   Salmonella typhimurium
  192 AA;
  Local Similarity
es 15; Conserv
   SEQUENCE FROM N.A.
   (Rel.
(Rel.
(Rel.
   SEQUENCE FROM N.A.
  PubMed=10586519;
   NCBI_TaxID=602;
  ACRO_RABIT
P48038;
01-FEB-1996
01-FEB-1996
01-NOV-1997
27;
   STRAIN-LT2;
   FLHC_SALTY
  SEQUENCE
   Ouery Match
   RESULT 11
ACRO_RABIT
   EMBL;
  396
```

1;

Gaps

5,

Indels

Matches

q

ò

PT PT

48

```
SOUTH FREE CONTROL CON
   Q64105; Q63996;
01-NOV-1997 (Rel
01-NOV-1997 (Rel
01-OCT-2000 (Rel
SEPIAPTERIN REDU
   MEDLINE=95178553; 1
Ota A., Ichina
  Huber R.;
"The 1.25-A crystal structure of sepiapterin reductable in the sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the structure of sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reductable in the sepiapterin reduct
  EMBL;
EMBL;
PDB; 1
PDB; 1
   use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
   cell
  Park Y.S. "Cloning
   Oxidoreductase;
NP_BIND 14
  Ota A., Ichinose H., Nagatsu T.; "Mouse sepiapterin reductase: an tetrahydrobiopterin biosynthesis.
                                 CONFLICT
  X-RAY CRYSTALLOGRAPHY (1.25 ANGSTROMS). MEDLINE=98070299; PubMed=9405351;
  CDNA
  Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
   DOMAIN
   Auerbach G.,
   "Northern blot analysis of sepiapterin cell lines and tissues.";
  Maier J.,
   MEDLINE=94136218;
  SEQUENCE OF 209-261 FROM
   Biochim. Biophys.
  Lee
  MEDLINE=99227131;
  SEQUENCE FROM N.A
   Mus musculus
  NCBI_TaxID-10090;
  s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the Excuropean Bioinformatics Institute. There are no restriby non-profit institutions as long as its content
   FUNCTION: CATALYZES THE FINAL ONE OR TWO REDUCTIONS IN TETRA-
HYDROBIOPTERIN BIOSYNTHESIS TO FORM 5,6,7,8-TETRAHYDROBIOPTERIN.
CATALYTIC ACTIVITY: 7,8-DIHYDROBIOPTERIN + NADP(+) = SEPIAPTERIN
   SUBCELLULAR LOCATION: CYTOPLASMIC.
  SUBUNIT: HOMODIMER
  promoter region
   MGI:103078; Spr.
  1NAS;
   sequence.
  PF00106; adh_short; 1.
   .W., Park I.Y.,
  of mouse
   IPR002198;
  1136218; PubMed=8304109;
Schott K., Werner T., Bacher A.,
   16-FEB-99.
30-MAR-99.
      261 AA;
  (Rel. 35,
(Rel. 35,
(Rel. 40,
  REDUCTASE
  (Mouse).
Chordata;
   Herrmann
   NADP;
  NOT_ANNOTATED_CDS
   Acta 1445:165-171(1999).
  sepiapterin reductase gene
   PubMed=10209270;
  Acta
   PubMed=7873607;
   27883
  3
3
3
  Hahn
  338:195-198(1993).
  A.,
  3D-structure
   Last sequence update)
Last annotation updat
(EC 1.1.1.153) (SPR).
  Created)
  1260:320-322(1995).
  Υ.,
      MW;
   JOINED
   Gutlich M., Fischer M.,
PTERIN BINDING (POTENTIAL D -> G (IN REF. 2).
; 102294E439CB8AEC CRC64;
  NADP
  Lee J.E.,
  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
  enzyme involved
  YB)
  Primary structure
  SIMILARITY)
  update)
  reductase mRNA in
  Seong C.S.,
   Ziegler I.;
   (POTENTIAL).
  reductase mitters.";
   and characterization
  in
  Jacob
  Chung
  deduced
  the
  restrictions
   reveals
  .
U.,
   final
   EMBL
  SEPIAPTERIN
   mammalian
  C.
  a collaboration
  Bacher
  from
   step
  outstation
  of
  Α.
   9
```

```
RESULT ]
  Qy.
   В
   밁
   Matches
   Query Match
  Best Local
   P16960;
01-AUG-1990
01-NOV-1995
30-MAY-2000
  SEQUENCE OF 4785-5035 FROM N.A.

MEDLINE=91065640; PubMed=2174405;
Harbitz I., Chowdhary B., Thomsen P.D., Davies W., Kaufma Harbitz I., Chowdhary B., Thomsen F., Hauge J.G.;
Kran S., Gustavsson I., Christensen K., Hauge J.G.;
"Assignment of the porcine calcium release channel gene, for the malignant hyperthermia locus, to the 6p11-->q21 s
                    -
   STRAIN=GERMAN LANDRACE; MEDLINE=94117003; PubMe
   Submitted
  verification of the Arg615-->Cys615 mutation,
  Eukaryota; Metazoa;
Mammalia; Eutheria;
  CHANNEL)
  chromosome 6.
   Brenig
   Harbitz I., Kristensen T., Bosnes M., Kran S., Davies W.; "DNA sequence of the skeletal muscle calcium release channel cDNA and
  Sus scrota
  RYR1 OR CRC
   RYANODINE RECEPTOR,
   RYNR_PIG
  receptor
   SEQUENCE OF
  MEDLINE=93036581; PubMed=1329581;
  STRAIN=NORWEGIAN LANDRACE; TISSUE=Skeletal muscle;
  SEQUENCE FROM N.A.
   NCBI_TaxID=9823;
   Jeeb T., Schmolzl S., Brem G., Breniq
Genomic organization of the porcine
   SEQUENCE OF 1129-2643 FROM N.A.
   154 VNISSLCALQPYKGWGLYCAGKAARDMLYQVLAAEEPSVRVLSYAPG
   63
  99
   13
MISCELLANEOUS: THE CALCIUM RELEASE CHANNEL ACTIVITY RESIL C-TERMINAL REGION WHILE THE REMAINING PART OF THE PROTEIN CONSTITUTES THE 'FOOT' STRUCTURE SPANNING THE JUNCTIONAL BETWEEN THE SR AND THE T-TUBULE. IT IS POSSIBLE THAT THE STRUCTURE INTERACTS WITH THE CYTOPLASMIC REGION OF THE DIHYDROPYRIDINE RECEPTOR.
MISCELLANEOUS: RYANODINE IS AN ALKALOID THAT BINDS TO THE CA-RELEASE CHANNEL IN JUNCTIONAL SR AND MODULATES ITS ACT
  MG++,
  SUBUNIT: HOMOTETRAMER (POTENTIAL)
MISCELLANEOUS: THE CALCIUM RELEAS
   SARCOPLASMIC RETICULUM. CONTRACTION OF TRIGGERED BY RELEASE OF CA++ FROM SR FO
   omics 8:243-248(1990):
FUNCTION: COMMUNICATION BETWEEN TRANSVERSE-TUBULES
SARCOPLASMIC RETICULUM. CONTRACTION OF SKELETAL MUS
  T-TUBULES.
  VTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQ
  RMLKALCSQKPAAG----ISSERSRDTKIEVIQLVK---NLLTYVRG
  INNAATLGDVSKGFLNVN----DLAEVNNYWALNLTS-MLCLTSGTLNAFQDSPGLSKTV
   Similarity
   (RYR1) gene coding region 18:349-354(1993).
  LLANEOUS: THE CALCIUM RELEASE ATP, AND CALMODULIN.
   hyperthermia, in Norwegian
   (APR-1996)
   (Pig).
  (Rel.
   1129-2801 FROM N.A.
   Conservative
   (Rel.
  23:395-402(1992).
   STANDARD;
   . 15, Created)
. 32, Last sequence upo
. 39, Last annotation u
OR, SKELETAL MUSCLE (SF
   DRACE; TISSUE=Liver; PubMed=8288238;
  Chordata; Craniata; Ver
Cetartiodactyla; Suina;
   12.48;
   to the
   26;
   Pred. No. 2.v,
26; Mismatches
   EMBL/GenBank/DDBJ databases
   Score 69;
Pred. No.
   Brenig B.;
  4624 to
   on update)
   5035
   update)
  mutation, associated
landrace pigs.";
   skeletal muscle ryanodine
   SR FOLLOWING
   CHANNEL
  Vertebrata;
ina; Suidae;
  DB 1; Length 261;
   æ
   46;
   MUSCLE
  ACTIVITY RESIDES
OF THE PROTEIN
  SI
  MODULATED
   Indels
   Kaufman
  L MUSCLE IS
DEPOLARIZATION
  Euteleostomi;
Sus.
   CALCIUM RELEASE
  102
   a candidate 
segment of
   with
   ч
;
   12;
  BY CA++,
   GAP
  porcine
  Gaps
  OF,
  153
  62
  THE
   4
```

ITS ACTIVITY.

```
REPEAT
  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  4
-!- SIMILARITY: LOCAL & LOW WITH THE NICOTINIC ACETYLCHOLINE RECEPTOR
   57 AIQ------RIQRMLKALCSQKPAAGISSERSRDTKIE------VIQLVKNLLTYV 100
   LYEILASLIRGNRANCALFSNNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 581
   28; Gaps
  01-OCT-1989 (Rel. 12, Created)
01-OCT-1989 (Rel. 12, Last sequence update)
15-ULL-1998 (Rel. 36, Last annotation update)
RYANODINE RECEPTOR, SKELETAL MUSCLE (SKELETAL MUSCLE CALCIUM RELEASE
  Takeshima H., Nishimura S., Matsumoto T., Ishido H., Kangawa K., Minamino N., Matsuo H., Ueda M., Hanaoka M., Hirose T., Numa S.; "Primary structure and expression from complementary DNA of skeletal
  9 LKELIEELVNITQNQASLCNGSMVWSVN------LTAGMYCAALES--LINVSDCS 56
   Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
   Receptor; Transmembrane; Ionic channel; Calcium channel; Repeat;
   DB 1; Length 5035;
   44; Indels
  -> P (IN REF. 2 AND 3).
E00613F2027B94A4 CRC64;
   5037 AA
  12.4%; Score 69; DB 20.3%; Pred. No. 92; iive 26; Mismatches
   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
TISSUE-Skeletal muscle;
MEDLINE-89262082; PubMed-2725677;
   EMBL; X62880; CAA44674.1; ALT_SEQ.
   5035 AA; 565317 MW;
   Phosphorylation; Glycoprotein. CONFLICT 2092 A
  InterPro; IPR000107; ...
InterPro; IPR000107; ...
InterPro; IPR001215; ...
InterPro; IPR001302; ...
Pfam; PF01365; RYDR_ITPR; 1.
Pfam; PF00622; RYR; 4.
  EMBL; X68247; CAA48318.1; -. EMBL; X69465; CAA49225.1; -. EMBL; M32501; AAA31022.1; -. PIR; A37105; A37105
   muscle ryanodine receptor.";
Nature 339:439-445(1989).
   PRINTS; PR00795; RYANODINER.
  Query Match
Best Local Similarity 20.39
Matches 25; Conservative
   STANDARD;
   TISSUE-Skeletal muscle;
            (N-ACHR) SUBUNITS
  [2]
SEQUENCE FROM N.A.
  NCBI_TaxID=9986,
   101 RGV 103
  642 TSI 644
   RYNR_RABIT
   CHANNEL).
   SEQUENCE
   522
   RYNR_RABIT
ð
   g
   ò
   qq
   δ
   g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
  -i-TISSUE SPECIFICITY: FAST- OR SLOW-TWITCH SKELETAL MUSCLE.
-i-MISCELLANBOUS: THE CALCIUM RELEASE CHANNEL IS MODULATED BY CA++,
MG++, APP, AND CALMODULIN.
-i-MISCELLANBOUS: THE CALCIUM RELEASE CHANNEL ACTIVITY RESIDES IN THE
C-TERMINAL REGION WHILE THE REMAINING PART OF THE PROTEIN
CONSTITUTES THE FOOT' STRUCTURE SPANNING THE UNCTIONAL GAP
BETWEEN THE SR AND THE T-TUBULE. IT IS POSSIBLE THAT THE FOOT
STRUCTURE INTERACTS WITH THE CYTOPLASMIC REGION OF THE
DIHYDROPYRIDINE RECEPPOR.
  MISCELLANEOUS: RYANODINE IS AN ALKALOID THAT BINDS TO THE CA-RELEASE CHANNEL IN JUNCTIONAL SR AND MODILATES ITS ACTIVITY. SIMILARITY: LOCAL & LOW WITH THE NICOTINIC ACETYLCHOLINE RECEPTOR (N-ACHR) SUBUNITS.
   Hohenegger M., Helimann G.; "Phosphorylation of serine 2843 in ryanodine receptor-calcium release channel of skeletal muscle by cAMP-, cGMP- and CaM-dependent protein
  Biochim. Biophys. Acta 1175:193-206(1993).
--- FUNCTION: COMMUNICATION BETWEEN TRANSYERE-TUBULES AND SARCOPLASMIC RETRICTULM. CONTRACTION OF SKELETAL MUSCLE IS TRIGGERED BY RELEASE OF CA++ FROM SR POLLOWING DEPOLARIZATION OF
MEDLINE-90130482; PubMed-2298749; Carzato F., Fujii J., Otsu K., Phillips M., Green N.M., Lai F.A., Melsoner G., Maclennan D.H.; "Molecular cloning of cDNA encoding human and rabbit forms of the
  Receptor; Transmembrane; Ionic channel; Calcium channel; Repeat;
  Ca2+ release channel (ryanodine receptor) of skeletal muscle sarcoplasmic reticulum.";
   Suko J., Maurer-Fogy I., Plank B., Bertel O., Wyskovsky W.,
   M' (POTENTIAL).
M' (POTENTIAL).
M1 (POTENTIAL).
M2 (POTENTIAL).
M3 (POTENTIAL).
M4 (POTENTIAL).
M6 (POTENTIAL).
M6 (POTENTIAL).
M6 (POTENTIAL).
M6 (POTENTIAL).
M7 (POTENTIAL).
M8 (POTENTIAL).
M9 (POTENTIAL).
M10 (POTENTIAL).
GLU-RICH (ACIDIC).
GLU-RICH (ACIDIC).
GXU-RICH (ACIDIC).
GXU-RICH (ACIDIC).
GXU-RICH (ACIDIC).
GXU-RICH (ACIDIC).
GXU-RICH (ACIDIC).
   SUBUNIT: HOMOTETRAMER (POTENTIAL).
   Biol. Chem. 265:2244-2256(1990)
   MEDLINE=93120178; PubMed=8380342;
  Phosphorylation; Glycoprotein.
  EMBL; X15209; CAA33279.1; -. EMBL; X15750; CAA33762.1; -.
  Pfam; PF01365; RYDR_ITPR; 1.
   Pfam; PF02026; RyR; 4.
Pfam; PF00622; SPRY; 3.
PRINTS; PR00795; RYANODINER.
   PHOSPHORYLATION OF SER-2843
  PIR; S04654; S04654.
InterPro; IPR000107; -.
   InterPro; IPR001215; -. InterPro; IPR003032; -.
   3206
   4041
4300
4362
4580
4580
   4820
   4937
1913
2959
955
  InterPro; IPR000699;
   4023
  4879
4914
1873
842
842
  T-TUBULES
   kinase.";
  TRANSMEM
TRANSMEM
  MOD_RES
DOMAIN
  TRANSMEM
  TRANSMEM
  TRANSMEM
   TRANSMEM
  TRANSMEM
  TRANSMEM
  TRANSMEM
  TRANSMEM
  TRANSMEM
  TRANSMEM
  DOMAIN
  EMBL;
```

```
В
   Š
  В
   Š
  B
   δõ
   RESULT 15
  Query Match
Best Local S
Matches 26
        Aviles E., Berno A., Brennan T., Carpenter J., Chen E., Cherry Chung E., Duncan M., Guzman E., Hartzell G., Hunicke-Smith S., Hyman R., Kayser A., Komp C., Lashkari D., Lew H., Lin D., Mosedale D., Nakahara K., Namath A., Norgren R., Oefner P., Oh Petel F.X., Roberts D., Sehl P., Schramm S., Shogren T., Smith Taylor P., Wei Y., Yelton M., Botstein D., Davis R.W.; Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
  _YEAST
UBP5_YEAST
   CARBOHYD
CARBOHYD
CARBOHYD
  CONFLICT
  CARBOHYD
CARBOHYD
   MOD_RES
MOD_RES
SIMILAR
   STRAIN-S288C / AB972;
Dietrich F.S., Mulligan J.T.,
  "UBP5 encodes a putative yeast ubiquitin-specific protease that related to the human Tre-2 oncogene product."; Yeast 10:1497-1502(1994).
   Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomyc
   01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
UBIQUITIN CARBOXYL-TERMINAL HYDROLASE 5 (EC 3.1.2.15) (UBIQUITIN THIOLESTERASE 5) (UBIQUITIN-SPECIFIC PROCESSING PROTEASE 5)
(DEUBIQUITINATING ENZYME 5).
   P39944;
01-FEB-1995
   MOD_RES
   SEQUENCE FROM N.A. MEDLINE-95176708; Pubmed-7871889;
  Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
  SEQUENCE FROM N.A.
   Xiao W., Fontanie T.,
  UBP5 OR YER144C
   SEQUENCE
  REPEAT
REPEAT
   NCBI_TaxID=4932;
   REPEAT
REPEAT
  REPEAT
   522
  642 TSI 644
   582 HIKSIISLLDKHGRNHKVLDVLCSLCVCNGVAVRSNQDLITENLLPGRELLLQTNLINYV 641
  101 RGV 103
  Local Similarity 21.1
nes 26; Conservative
  57
  9 LKELIEELVNITQNQASLCNGSMVWSVN-----LTAGMYCAALES--LINVSDCS 56
   LYELLASLIRGNRANCALFSTNLDWVVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 581
  AIQ-----
  3466
3909
3950
4149
4864
2015
3481
   956
1345
1373
2726
2846
2843
3952
4323
   STANDARD;
A THIOL.

BELONGS TO PEPTIDASE FAMILY C19; ALSO KNOWN
  AA;
   RTQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
  3466
3909
3950
4149
  4864
   4861
  1069
1360
1388
2845
2959
2959
2843
3952
  12.4%;
21.1%;
   565238
  Tang M.;
  25;
  Score 69;
Pred. No.
   N-LINKED (GLCNAC...) (POT)
E -> D (IN REF. 2).
MISSING (IN REF. 2).
MW; 4ABD87AA26697070 CRC64;
   N-LINKED
N-LINKED
   WITH
   PHOSPHORYLATION PHOSPHORYLATION PHOSPHORYLATION
  N-LINKED
   M2 AND M3
  PRT;
   (INCOMPLETE).
   (INCOMPLETE)
  Mismatches
  INKED (GLCNAC. .
INKED (GLCNAC. .
INKED (GLCNAC. .
INKED (GLCNAC. .
INKED (GLCNAC. .
) D (IN REF. 2).
SING (IN REF. 2).
   ACHR-SUBUNITS
  805
  92;
  DB
  1;
  44;
   (BY CAPK AND CGPK). (POTENTIAL).
  Length 5037;
   TRANSMEMBRANE SEGMENTS
  Indels
  (POTENTIAL).
(POTENTIAL).
   (POTENTIAL)
   Araujo R.,
Cherry J.M.
   ٧.,
  18
   Gaps
  4.
```

```
QΥ
  Вþ
  Qy
     B
  SO THE TENT OF THE
  Query Match
Best Local S
Matches 25
   Pfam; PF00581; Rhodanese; 1.
Pfam; PF00442; UCH-1; 1.
Pfam; PF00443; UCH-2; 1.
Pfam; PF00443; UCH-2_1; 1.
PROSITE; PS00972; UCH_2_1; 1.
PROSITE; PS00973; UCH_2_3; 1.
PROSITE; PS50235; UC
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
   MEROPS; C19.006; -. SGD; S0000946; UBP5
  EMBL; U10082; AAC48928.1; EMBL; U18917; AAB64671.1;
  entities requires a license agreement.(See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
   use by non-profit institutions as long modified and this statement is not removed
  InterPro;
  InterPro;
     465
  415
   59
   σ
  FAMILY 2 OF UBIQUITIN CARBOXYL-TERMINAL HYDROLASES
VGTHDLVRMFLDNTYLNFINFDSSRGSK---GLLAKNFAILVNNMHRHGAF 512
  SPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC-----SAI
   QRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 109
  SPRIPPLPQQ -- NLSSSRQTILNNSQVLDLDLTVG ---
   Similarity
   IPR001394; -. IPR001763; -.
   Conservative
  12.2%;
   .' .'
   22;
   Score 68; DB
Pred. No. 13;
22; Mismatches
   BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.

BY RANCE.
  884054A66370DFF7
   There are no restrictions ng as its content is in
   1;
  Usage
   Length 805
  -LENIGNCCYMNCILQCL
  Indels
  and
  20;
  for
   Gaps
  commercia
  464
  58
  ö
   way
   4;
```

Search completed: May 14, 2001, 06:02:12 Job time: 43369 sec

Sequence:

Title:

Run on:

Searched:

Database

Result

Š.

```
Q89048 vesicular S 015087 homo sapien Q9ukw2 homo sapien Q9ukw2 homo sapien Q9ukw2 homo sapien Q9ukw2 homo sapien Q9105 sus scrofa Q29105 sus scrofa Q9ubbl homo sapien Q9n748 vesicular s Q921n3 rattus norv Q9w3n6 drosophila
   Q9jhg7 mus musculu
Q9q8p4 myxoma viru
Q70156 human immun
   098790 vesicular s
098xf0 escherichia
09mct4 bacteriopha
  09ssp2 arabidopsis
045966 caenorhabdi
  Q9slj6 arabidopsis
   09t1m4 bacteriopha 09xbm2 acidaminoco
           drosophila
  1 SPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 60
   21 SPVTPSPTLKELIEELVNITQNQASLCNGSNVWSVNLTAGMYCAALESLINVSDCSAIQR 80
   SEQUENCE FROM N.A.

Yang S., Boroughs K.L., McDermott M.J.;

"Canine Interleukin-13: Molecular Cloning of Full-Length cDNA and
Expression of Biologically Active Recombinant Protein.";

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF244915; AAF63204.1; -.
   Canis familiaris (Dog).
Wakaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
NCBI_TaxID=9615;
   ij
   Length 131;
29n949
   61 TQRMLKALCSQKPAAG-ISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNFR 110
  Indels
  .4915; AAF63204.1; -.
131 AA; 14268 MW; 9A142B4D0F80370F CRC64;
  Created)
Last sequence update)
Last annotation update)
  Last sequence update)
Last annotation update)
  98.1%; Score 545.5; DB 6;
99.1%; Pred. No. 3.8e-53;
11ve 0; Mismatches 0;
  01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last seq
01-OCT-2000 (TrEMBLrel. 15, Last ann
INTERLEUKIN-13.
  Q9Q8P4
Q70156
Q70156
Q9SSP2
045966
Q98790
Q9WXF0
Q9MXT4
Q9T1M4
                  Q89048
O15087
   098978
098778
092183
098386
098788
  Q9UKW3
Q9UKW2
P79271
Q29105
Q9UBB1
  95TIS60
  PRT;
                                     Q9UKX0
   (TrEMBLrel. 13, C
(TrEMBLrel. 13, I
(TrEMBLrel. 15, I
  Query Match
Best Local Similarity 99.1
Matches 110; Conservative
   PRELIMINARY;
   PRELIMINARY;
9995555544777777700058888777
   Q9TV84
Q9TV84;
01-MAY-2000 (
01-MAY-2000 (
01-OCT-2000 (
SEQUENCE
  09N0W9
  7
  RESULT
Q9TV84
RESULT
  6M0N60
  g
   ò
  PIPATE
  q
  Q9Lv84 bos taurus
O9udc7 homo sapien
026609 cryctolagus
O9mum4 mesostigma
098143 arabidopsis
Q88779 vesicular s
Q9m3h8 cicer ariet
  098780 vesicular's 098787 vesicular s 098787 vesicular s 036184 plautia sta 036165 bacteriopha
  Ogjkx5 mus musculu
Ognpk1 homo sapien
Og8791 vesicular s
Ogrlg1 rattus norv
  096661 trypanosoma
010619 helicoverpa
   May 14, 2001, 06:01:15; Search time 133.94 Seconds (without alignments) 96.259 Million cell updates/sec
   Q9n0w9 canis famil
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   110
  Description
  SPVTPSPTLKELIEELVNIT.....QLVKNLLTYVRGVYRHGNFR
                   Compugen Ltd
   hits satisfying chosen parameters:
       GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
  374700 segs, 117207915 residues
  SUMMARIES
  OM protein - protein search, using sw model
  Listing first 45 summaries
   010619
098780
098787
098789
036184
  Q9NOW9
Q9TV84
Q9TV84
Q28609
Q9MUM4
Q9S143
Q9S143
Q9JKX5
Q9JKX5
Q9NKX1
Q9NK11
Q9NF11
Q9R791
   Gapop 10.0 , Gapext 0.5
  sp_phage:*
sp_plant:*
sp_rodent:*
sp_unclassified:*
  3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
  sp_vertebrate:*
sp_virus:*
  Post-processing: Minimum Match 0% Maximum Match 100%
  sp_organelle:*
  US-09-451-527-105
   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
   sp_bacteria:*
  sp_mammal:*
   sp_archea:*
  SPTREMBL_15:*
  Query
Match Length
  sp_mhc:*
  BLOSUM62
  9..
110:
112:
12:
   Total number of
  Score
  Perfect score:
  Scoring table:
```

;

```
RESULT
Q28609
ID Q2
AC Q2
DT 01
DT 01
   οy
  RESULT
Q9UDC7
   밁
   В
  δÃ
   В
  õ
   SPIRE REPORTED TO SERVICE SPIRE  Query Match
Best Local Similarity
  Matches
  Matches
  Query Match
Best Local
Q28609;
Q28609;
Q1-NOV-1996
Q1-NOV-1996
Q1-OCT-2000
   SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=93027259; PubMed=1408B33;

MORGAN J.G., Dolganov G.M., Robbins S.E.,

"The selective isolation of novel cDNAs er

surrounding the human interleukin 4 and 5

surrounding the human interleukin 4 and 5

surrounding the Suran Acids Res. 20:5173-5179(1992).
   Q9UDC7
Q9UDC7;
01-MAY-2000
01-MAY-2000
01-OCT-2000
   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
   PROSITE;
   surrounding the human
Nucleic Acids Res. 20:
HSSP; P35225; 3ITR.
SEQUENCE 49 AA; 510
   P600
   Trigona W.T., Hirano A., Brown W.;
"Biological activities of interleukin-13 (IL-13) on bovine lymphocytes: implications for signaling through IL-13Ral.";
Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AF072807; AAD22748.1; -.
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos. MCBI_TaxID=9913;
  NCBI_TaxID=9606;
   SEQUENCE
   808
   IL-13
   SEQUENCE FROM N.A.
   INTERPRO;
  INTERLEUKIN-13
   22
   8.1
  60
   21
  Local
  N
  H
  taurus
  PVTPSPTLKELIEELVNTTQNQ-ASLCN
   PVPPSTALRELIEELSNITQTQKAPLCN
   HOMOLOG.
  SPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQ 59
   RTQRMLKALCSQKPAA-GISSERSRDTKIEVIQ
   SPVPSATALKELIEELVNITQNQKVPLCNGSMVWSLNLTSSMYCAALDSLISISNCSVIQ
   RTKRMLNALCPHKPSAKQVSSEYVRDTKTEVAQ 113
  Similarity
  PS00838; INTERLEUKIN_4_13; UNKNOWN_1
  IPR001325; -
   114 AA;
  (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
  (Bovine)
   114
  Conservative
   (TrEMBLrel.
  (TrEMBLrel.
  PRELIMINARY;
  PRELIMINARY;
  Conservative
  PRECURSOR
   5109 MW;
  56.8%;
71.0%;
   12355 MW;
  15.78;
71.48;
   13,
15,
    01,
01,
15,
  (FRAGMENT)
  10;
   Created)
Last sequence Last annotation
  Last
Last
   Created)
  1;
  Score 87.5; [Pred. No. 0.01]; Mismatches
   679CD23A190C778E
  Score 316; DB 6;
Pred. No. 1.1e-27;
   Craniata; Vo
Catarrhini;
  PRT;
  PRT;
   D8CC56E5627D030A CRC64;
  Mismatches
    annotation
   sequence up
annotation
                      sequence update)
  28
  87.5;
No. 0.
  275
  49
  91
  encoded
15 genes.
   Vertebrata;
  .011;
  Ą
  Ã
  Hinton
   DΒ
   Hominidae;
  update)
   update)
   4,
  6;
   CRC64;
   . <u>.</u> by
   Length 114;
   Length
  Indels
  Indels
   the
   Euteleostomi;
   regions
  Lovett M.;
   49;
  1;
   2
  Gaps
   Gaps
   80
  1;
  2
```

δõ

16

. Similarity 27; Conser

Conservative

19;

Pred. No. 4.5; ); Mismatches

5

29;

Indels

19;

Gaps

4.

LVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAI-----QRTQRMLKAL : : | | :::: : |: : : | ::: |

```
RESULT
Q9MUM4
   В
   Qy
  gb
  DE PTT DR R TTT
Query Match
Best Local S
Matches 27
   Q9MUM4;
Q9MUM4;
Q1-OCT-2000 (TrEMBL:
Q1-OCT-2000 (TrEMBL:
f 01-OCT-2000 (TrEMBI
   Matches
   Query Match
Best Local
  Signal.
SIGNAL
  Lemieux C., Otis C., Turmel submitted (JUL-1999) to the EMBL; AF166114; AAF43874.1;
   INTERPRO; IPRO01254; -.
PFAM; PF00089; trypsin; 1.
PROSITE; PS00134; TRYPSIN_HIS;
   Biochim. Biophys. Acta 1219:215-218(1994). EMBL; U05203; AAA61629.1; -. HSSP; P00734; 2HNT.
   Temleux C., Otis C., Turmel M.;
"Ancestral chloroplast genome in Moranch of green plant evolution.";
Nature 403:649-652(2000).
  Eukaryota; Viridiplantae; Chlorophyta; Prasinophyceae; Chlorodendrales; Mesostigmataceae; Mesostigma.
  preproacrosin-related cDNA.";
Biochim, Ricohum
   SEQUENCE
  Chloroplast
   SEQUENCE FROM N.A.
  MEDLINE=20150907; PubMed=10688199;
   Chloroplast
  Mesostigma
  Q9MUM4
  SEQUENCE
   CHAIN
  Richardson R.T., O'Rand M.G., "Cloning and sequencing of cD
   STRAIN=NEW ZEALAND WHITE;
MEDLINE=94368861; PubMed=
   SEQUENCE FROM N.A.
   Eukaryota: Metazoa; Chordata; Craniata; vertebrata; Eu
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus
  Oryctolagus cuniculus (Rabbit).
Eukaryota: Metazoa: Chordata: Craniata: Vertebrata: Euteleostomi;
   SEQUENCE FROM N.A.
  NCBI_TaxID=41882;
   NCBI_TaxID=9986;
  PUTATIVE PREPROSPERMINOGEN PRECURSOR.
  244
  190 PSPTLMEARVDLINL-----ELCNSTQWYNGRITASNLCAGYPS-GKIDTCQRLQQLVEV
  65
  5 PSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQRTQRM
  ა
   닺
   닺
   Similarity 32...
20; Conservative
  66
   245
  viride
  1
17
275 AA;
  415
  (TrEMBLrel. 15, Created)
(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 15, Last annotation update)
ASTID DIVISION PROTEIN.
   PRELIMINARY;
  AA;
   PubMed=8086468;
   16
275
29965
  46813
           13.2%; 28.7%;
  14.4%;
   Turmel M.;
st genome in Mesostigma
  MW;
  WW;
  TISSUE-TESTIS;
   M.;
EMBL/GenBank/DDBJ
  Score 80; DB
Pred. No. 0.53
11; Mismatches
            Score 73.5;
Pred. No. 4
   PROSPERMINOGEN.
8FC2467414069C61 CRC64;
   PRT;
  UNKNOWN_1.
  E35116E9692EC782
   for rabbit preproacrosin
   415
   DB 6
0.53;
   AA
                       DВ
   6,
  viride
                      8;
  25;
   databases
   Length 275
  CRC64;
                     Length
  Indels
  reveals
  and
  an
  6
   þ
  Gaps
  novel
  243
  64
   2
```

9

Gaps

31;

Q9SI43

DDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTT

RESULT Q9SI43

247

g ò

```
SEQUENCE FROM N.A.
STRAIN-CV. CASTELLANA; TISSUE-ETIOLATED EPICOTYLS;
Doptico B., Munoz F.J., Labrador E.;
"A putative UDP-Glycose: Flavonoid glycosyltransferase is expressed in chickpea epicotyls.";
   CLILRGQVMTSDCSSSAKSQNSRQS--SESPSPSNSPEHASRASASPNLWDFKFTEVQLI 130
   136 PIKPSPGFARLTEPLVEAEKGSHGVIVNSFAELDEGYTEYYENLTGRKVWHVGPTSLMIK 195
   14 PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSEQQIVTSG-N 72
   2 PVTPSPTLKELIEELVN-----ITQNQASL-----CNGSMVWSVNLTAGMYC 43
   44 AALESLINVSDCSAIQRTQRMLKALCSQKPAA-----GISSERSRDTKIEV---IQLVK 94
  2 PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
  43 CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSR------DTKIEVIQLV 93
  01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
PUTATIVE UDP-GLYCOSE (FRAGMENT).
Clocar ariethum (Chickpea) (Garbanzo).
Eukaryota: Viridiplantae: Embrophyta: Tracheophyta; Spermatophyta; Magnoliophyta: eudicotyledons; core eudicots; Rosidae; eurosids I;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Scl. U.S.A. 93:13030-13035(1996).
EMBL; UINTERRO; IPR000224; -.
PFAM: PF00922; Phosphoprotein; 1.
  13.0%; Score 72.5; DB 14; Length 150; 24.2%; Pred. No. 1.8; ive 20; Mismatches 40; Indels 31
  outsitted (APR-2000); EMBL, AJ400801; CAB8666.1; -... SEQUENCE 438 22
   150 150
150 AA; 16711 MW; 16D11C4E8E8A65E7 CRC64;
   Created)
Last sequence update)
Last annotation update)
   13.0%; Score 72.5; DB 10; 26.1%; Pred. No. 6.2;
  48;
   A
   PRT; 1763 AA
  26.1%; Pred. w...
   Fabales; Fabaceae; Papilionoideae; Cicer.
   PRT;
   (TrEMBLrel. 15, C
(TrEMBLrel. 15, I
(TrEMBLrel. 15, I
  Query Match
Best Local Similarity 24.2'
Matches 29; Conservative
  35; Conservative
   PRELIMINARY:
   PRELIMINARY;
   : : | |:| |:
254 HQFLWV--VHRKGD 265
   95 NLLTYVRGVYRHGN 108
  Best Local Similarity
Matches 35; Conserv
   NCBI_TaxID=3827;
   01-OCT-2000 (
01-OCT-2000 (
01-OCT-2000 (
  NON_TER
NON_TER
SEQUENCE
  Query Match
   09JKX5;
   09мзнв;
   Q9JKX5
   09M3H8
  73
  RESULT
Q9JKX5
  q
   QQ
   Dp
   Db
      REAL BREEFERS SOFTER BREEFERS
   ò
  οy
   ò
   δλ
  4;
   Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D., Fujii C.Y. Mason T.M., Bowman C.L., Barnstaad M.E., Feldblyum T.V., Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S., Cronin L.A., Shen M., VanAken S.E., Umayam L., Tallon L.J., Gill J.E., Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R., Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A., Salzberg S.L., Fraser C.M., Venter J.C.; Sequence and analysis of chromosome II of Arabidopsis thallana.";
  188 LIQPNLSTASIC-GAIIWLVALTAGIHWFYLNSILSIGAVTALISLGSQEYQRQRIISFL 246
   387 AGORCMALSTVVFVGDAKSWEDKLVERA-KALKVTCGSEPDADLGPVISKQAKERICRLI 445
   39 AGMYCAALESLINVSDCSA----IQRTQRMLKALCSQKPAAGISSERSRDTKIEVIQLV 93
   Arabidopsis thaliana (Mouse-ear cress).
Eukaryota: Viridiplantee; Embryophyta: Tracheophyta; Spermatophyta;
Magnoliophyta: eudicotyledons; core eudicots; Rosidae; eurosids II;
Brassicales; Brassicaceae; Arabidopsis.
  17;
  Length 607;
  Indels
  Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus.
  PFAM; PF00171; aldedh; 1.
PROSTIE; PS00070; ALDEHYDE_DEHYDR_CYS; UNKNOWN_1.
PROSTIE; PS000225; CRYSTALIN_BETAGAMMA; UNKNOWN_1.
SEQUENCE 607 AA: 65926 MW; 0257A3606B31165C CRC64;
   01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-OCT-2000 (TrEMBLrel. 15, Last annotation update) PUTATIVE METHYLMALONATE SEMI-ALDEHYDE DEHYDROGENASE.
  (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 15, Last annotation update)
  Last annotation update)
   13.2%; Score 73.5; DB 10;
ilarity 26.4%; Pred. No. 7;
Conservative 16; Mismatches 31;
   Last sequence update)
  150 AA.
   607 AA.
  69 CSQKPAAGISSERSRDTKIEVIQLVKNLLTYVRG 102
   Rodriguez L.L., Fitch W.M., Nichol S.T.;
   94 KN-----LLTYVRGV----YRHGNF 109
   446 QSGVDDGAKLLLDGRDIVVPGYEKGNF 472
  01-FEB-1997 (TrEMBLrel. 02, Created)
  PRT;
   PRT;
  MEDLINE-97075113; PubMed-8917539;
  01-FEB-1997 (TrEMBLrel. 02, 01-MAY-2000 (TrEMBLrel. 13, PHOSPHOPROTEIN (FRAGMENT).
   Nature 402:761-768[1999).
EMBL; AC007197; AAD25855.1;
   Vesicular stomatitis virus.
   PRELIMINARY;
  PRELIMINARY;
   HSSP; P56533; 1A4S.
INTERPRO; IPR001064; -.
INTERPRO; IPR002086; -.
  SEQUENCE FROM N.A.
STRAIN-CV. COLUMBIA;
   Query Match
Best Local Similarity
Matches 23; Conserv
  [1]
SEQUENCE FROM N.A.
  NCBI_TaxID=11276;
  NCBI_TaxID=3702;
   STRAIN-0888CRB;
  01-MAY-2000
   098779;
```

9

Gaps

31;

098779

RESULT

qq ò qq

Length 438; Indels

```
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON PK1
ON
  멍
   õ
  Вp
  Qy
  В
   Š
   Š
   Ş
  В
  В
   RESULT 10
   Query Match
Best Local
  Matches
  Query Match
Best Local Similarity
  Matches
   Q9NPK1 PRELIMINARY; PRT; 5038 AA.
Q9NPK1;
Q1-OCT-2000 (TrEMBLrel. 15, Created)
O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
SKELETAL MUSCLE RYANODINE RECEPTOR.
   "The structural organization of the human receptor (RYRI) gene."; Genomics 34:24-41(1996); Genomics 38:24-41(1996); EMBL; U48508; AAC51191.1; JOINED. EMBL; U48449; AAC51191.1; JOINED.
  Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
  Thomas T., Voss A.K., Chowdhury K., Gruss P.; "Querkopf, a MYST family histone acetyltransferase, is required normal cerebral cortex development."; Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
  SEQUENCE FROM N.A. MEDLINE-96299657; PubMed-8661021;
   1390
   SEQUENCE
   Phillips M.S., Fujii J., Khanna V.K., de Jong P.J., MacLennan D.H.;
   1446 VERPPSSSQQLAQ 1458
   SEQUENCE
  Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
  NCBI_TaxID=9606;
   Transterase.
   EMBL; AF222800; AAF26744.1;
  TISSUE-BRAIN;
  SEQUENCE FROM N.A.
   Mus musculus (Mouse)
     641
  101
  581
   521
   NCBI_TaxID-10090;
  HISTONE ACETYLTRANSFERASE QUERKOPF
   57
   20 TQNQASLCNGSMVWSVNLTAGMYCAALESLINVS-DCSAIQRTQRMLKALCSQKPAAGIS 78
   79 SERSRDTKIEVIQ 91
  9
   LKELIEELVNITQNQASLCNGSMVWSVN------LTAGMYCAALES--LINVSDCS 56
TSI 643
  RGV 103
  HIKSIISLLDKHGRNHKVLDVLCSLCVCNGVAVRSNQDLITENLLPGRELLLQTNLINYV 640
   AIQ-----
  LYELLASLIRGNRSNCALFSTNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 580
  SQNS---CSYSSLTSSNLTQNS-CAVTQQMSNISGSCSMLQQTSISSPPTCSVKSPQGCV 1445
  26;
  23;
  Similarity
  5038
   1763 AA;
  Conservative
   Conservative
   AA;
  RTQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
   Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
  12.9%;
   565171 MW;
  13.0%;
   196879 MW;
   11;
  26;
  Score 72.5; D
Pred. No. 31;
11; Mismatches
  Score 72; Db -,
No. 1.2e+02;
  Craniata; Vertebrata; | Sciurognathi; Muridae;
  Mismatches
   1CFC2C30B17879F9 CRC64;
  3A570C624B8094B0 CRC64;
   DeLeon S., Yokobata
   DB
   skeletal muscle ryanodine
   34;
   43; Indels
   Length 5038;
  Indels
  Length
  Euteleostomi;
; Murinae; Mus
   28;
   <u>ن</u>
  Gaps
   Gaps
  for
  4;
   ω
```

```
RESULT
Q98791
ID Q98
AC Q98
DT Q98
DT Q98
DT Q11
DT Q11
DT Q11
DT Q11
DT Q1
DT Q1
COC VC
COC VC
COC VC
RP RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV VC
RV
   RESULT 12
Q9R1G1
  Дb
   Ş
   g
   δÃ
   Matches
   Query Match
   Receptor.
   Q9RIG1 PRELIMINARY; PRT; 155 AA.
Q9RIG1;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-JUN-2000 (TrEMBLrel. 14, Last annotation update)
RYANODINE RECEPTOR TYPE 1 (FRAGMENT).
  Q98791, PRELIMINARY;
Q98791,
01-FEB-1997 (TrEMBLrel. 02,
01-FEB-1997 (TrEMBLrel. 02,
01-MAY-2000 (TrEMBLrel. 13,
  caffeine-sensitive calcium sto
Am. J. Physiol. 227:0-0(1999).
EMBL; AF112256; AAD48899.1; -
  TISSUE=SKELETAL MUSCLE;
Martin C., Hyvelin J.-M.,
Savineau J.P.;
  Eukaryota; Metazoa; Chordata; Craniata; Mammalia; Eutheria; Rodentia; Sciurognat
  SEQUENCE FROM N.A
   NON_TER
  Rodriguez L.L., Fitch W.M., Nichol S.T.; "Ecological factors rather than temporal evolution of vesicular stomatitis virus."
   PFAM; PF01365; RYDR_ITPR; 1.
   "Pregnant rat myometrial cells show
  NCBI_TaxID=10116;
   Rattus norvegicus (Rat)
  SEQUENCE
   Viruses; ssRNA negative-strand viruses; Rhabdoviridae; Vesiculovirus.
   PHOSPHOPROTEIN (FRAGMENT).
                           NON_TER
   Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
  STRAIN=1286CRB3;
   Vesicular stomatitis virus
   PFAM; PF00922; Phosphoprotein;
   MEDLINE=97075113; PubMed=8917539;
  NCBI_TaxID=11276;
  SEQUENCE FROM N.A.
   NTERPRO;
  NTERPRO;
   73
  43
  14
  Local
  N
  CLILRGQVMTSDCSSSAKSQN--SGQSSESPSPSNSPEHASRASASPNLWDLKFTEVQLI 130
  CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSR---
  PVTPSPTLKELIEEL------VNITQNQA------SLCNGSMVWSVN----LTAGMY 42
  PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG~N 72
  29;
  Similarity
   IPR000699;
   IPR000224;
155
155 ?
   150
150 AA;
  Conservative
  AA;
   150
; 16577 MW;
155
17476
   12.98;
  MW;
   Chapman K.E.,
   18;
  stores.";
  Score 71.5; DB
   Last sequence update)
Last annotation update)
   Created)
   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
   PRT;
A774F50D4633F5EA
  Mismatches
  E3D1095B842ACFFD CRC64;
   heterogeneous
   150
   Marthan R.,
   Mononegavirales;
   factors dominate
   Ą
   DB 14;
  update)
   42;
CRC64;
  -----DTKIEVIQLV 93
   Indels
   ryanodine-
   Length
   Ashley R.H.,
   150;
   31;
   and
   Rattus.
   Gaps
```

9

Query Match

12.8%;

Score 71;

DΒ

Length 155;

3;

```
Search completed: May 14, 2001, 06:01:18
Job time: 43961 sec
   01-FEB-1997 (TrEMBLrel. 02,
  PHOSPHOPROTEIN (FRAGMENT).
Vesicular stomatitis virus.
  Conservative
   Conservative
  PRELIMINARY;
  INTERPRO; IPR000224;
   Query Match
Best Local Similarity
Matches 26; Conserv
   150
150 AA;
  Query Match
Best Local Similarity
Matches 29; Conserv
   SEQUENCE FROM N.A.
  NCBI_TaxID=11276;
   REVISIONS.
  Tribe D.;
   NON_TER
SEQUENCE
   NON_TER
  098780;
   098780
   RESULT 15
   148
   73
   098780
                     RA REPRETENT REP
   g
  ò
  q
  g
  ò
   ŏ
   ò
   Db
  4
  .,
3
  57 AIQ------RIQRMLKALCSQKPAAGISSERSRDTKIE-----VIQLVKNLLTYV 100
   Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
NCBI_TaxID=5691;
   1 . LYELLASLIRGNRTNCALFSTNLDWLVSKLDRLEASSGILEVLYCVLIESPEVLNIIQEN 60
   "A novel gene encoding a protein with WD40 repeat and leucine zipper motifs from Trypanosoma brucei.";
Submitted (Ocr-1998) to the EMBL/GenBank/DDBJ databases.
INTERPRO; IPR001680;
   28; Gaps
  9 LKELIEELVNITQNQASLCNGSMVWSVN------LIAGMYCAALES--LINVSDCS 56
   EELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDCSA-----1QRTQRML 65
  18;
   Length 589;
   Indels
  Indels
  KALCSQKPAAGISSER-----SRDTKIEVIQLVKNLLTYVRG 102
   PRINTS; PR00320; GPROTEINBRPT.
PROSITE; PS00678; WD_REPEATS; UNKNOWN_4.
SEQUENCE 589 AA; 65481 MW; 2053B920666F51BF CRC64;
   RNA stage; Baculoviridae;
   Last sequence update)
Last annotation update)
   Last sequence update)
Last annotation update)
  44;
   40;
  5;
21.1%; Preu. ....
            Pred. No. 2.8;
   589 AA
   649 AA
  12.8%; Score 71; DB 22.9%; Pred. No. 13;
  Mismatches
   Helicoverpa zea nuclear polyhedrosis virus.
Viruses; dsDNA viruses, no RNA stage; Bacul
  Created)
   Created)
   PRT;
   PRT;
   STRAIN-ELKAR;
MEDLINE-95053907; PubMed-7964631;
   Hsu C.L., Lin Y.T., Huang J.D.;
  23;
   01-JUL-1997 (TEMBLEEL: 04, 01-JUL-1997 (TEMBLEEL: 04, 01-NOV-1998 (TEMBLEEL: 08, IMMEDIATE EARLY PROTEIN 1.
  10,
10,
  Conservative
                                       26; Conservative
  PRELIMINARY;
   01-MAY-1999 (TrEMBLrel.
01-MAY-1999 (TrEMBLrel.
01-JUN-2000 (TrEMBLrel.
   PRELIMINARY;
  PFAM; PF00400; WD40; 7
   Nucleopolyhedrovirus.
  Query Match
Best Local Similarity
Matches 24; Conserv
         Best Local Similarity
   Trypanosoma brucei
   SEQUENCE FROM N.A.
  SEQUENCE FROM N.A.
   NCBI_TaxID=10468;
   010619; 082480;
  PF20 HOMOLOG.
   121 TSI 123
  101 RGV 103
   STRAIN-427;
  010619
   096661
  RESULT 14
010619
AC 010619
AC 010619
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
DT 01-JUL
                                       Matches
  99
   qq
   ò
  g
  ò
   q
  δ
  q
```

```
the virus
  CLILKGQVMTSDCSSSAKSQN--SGQSSSSSPSPSPSRBASRASASPNLWDFKFTEVQLI 130
   Gaps
  31; Gaps
  PVTPSPTLKELIEEL-----VNITQNQA-----SLCNGSMVWSVN----LTAGMY 42
  CAALESLINVSDCSAIQRTQRMLKALCSQKPAAGISSERSR------DTKIEVIQLV 93
  14 PSWTQPVIKENGGERSLSLFPPVGLTQVQTEQWKKTIETVCESSKYWNLSECQIVTSG-N 72
Cowan P., Bulach D., Goodge K., Robertson A., Tribe D.E.; "Nucleotide sequence of the polyhedrin gene region of Helicoverpa single nucleocapsid nuclear polyhedrosis virus: placement of the vin lepidopteran nuclear polyhedrosis virus group II.";
   1 SPVTPSP-----TLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALES
  30;
   Rodriguez L.L., Fitch W.M., Nichol S.T.;
"Ecological factors rather than temporal factors dominate the evolution of vesicular stomatitis virus.";
Proc. Natl. Acad. Sci. U.S.A. 93:13030-13035(1996).
EMBL; U39212; AAB50940.1;
  Goodge K.,
   Length 150;
  649;
   Indels
  Indels
  Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; U67264; AAB54100.1; -.
SEQUENCE 649 AA; 75522 MW; BOD133AC9FEBD0E4 CRC64;
  Viruses; ssRNA negative-strand viruses; Mononegavirales; Rhabdoviridae; Vesiculovirus.
  Length
  E3D1095B8E8A65FD CRC64;
   49 LIN------VSDCSAIQRTQRMLKALCSQKPAAGISSERSRDTK
  Last sequence update)
Last annotation update)
  STRAIN=ELKAR (ELCAR);
Le T.H., Wu T., Robertson A., Bulach D., Cowan P.,
  DB 14;
   18; Mismatches 33;
  42;
   DB 14;
  AA.
   12.7%; Score 70.5; D 24.2%; Pred. No. 3; ive 18; Mismatches
  150
   Score 71;
Pred. No.
  Created)
  PRT;
   STRAIN-0986CRB2;
MEDLINE-97075113; PubMed-8917539;
   PFAM; PF00922; Phosphoprotein; 1.
  150
16611 MW;
   12.8%;
24.3%;
   01-FEB-1997 (TrEMBLrel. 02, 01-MAY-2000 (TrEMBLrel. 13,
```

. 9

1-1-1-1-1